

Gill (O)

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FIFTH MEMOIR.

A COMPARISON OF ANTIPODAL FAUNAS.



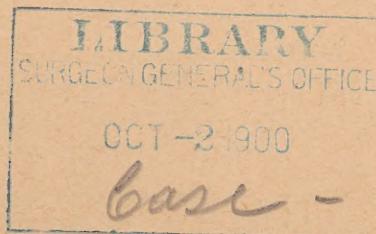
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A COMPARISON OF ANTIPODAL FAUNAS.

BY THEODORE GILL.

(Read November, 1887.)

PREFATORY.

I.

A comparison of antipodal faunas, it was thought, might reveal the salient characteristics of such, independent of climatic considerations, and none were better fitted for the purpose of study than the piscine inhabitants of the British islands on the one hand and the New Zealand waters on the other. Both groups of islands agree approximately in size and the temperature of the waters. The difference in the distances from neighboring lands introduces, it is true, another factor, but, far from being the cause of embarrassment, it might tend to throw light on the subject. For these reasons a comparison was instituted between the regions in question.

The British fishes have been quite recently fully described and illustrated, and our knowledge of the subject, so far at least as specific diversities are concerned, has been nearly brought up to date by Surgeon Francis Day in his "Fishes of Great Britain and Ireland." A summary of the families and including orders, as understood by the present writer, has also been given in a comparison of the faunas of the British islands and Massachusetts in the Report of the Smithsonian Institution for 1883.

The New Zealand fishes, at time of presentation of this memoir, had not been collected in any nomenclator (the last published list of the species having appeared in 1872), and the abundant literature on the subject, whereby the number of species had been nearly doubled, was scattered through many volumes. It was necessary, therefore, to bring together and consult the numerous articles in which the information was embodied. Since then a very useful and ably compiled "List of the New Zealand Fishes" has been issued by Prof. J. W. Hutton, long and favorably known for his researches on the fishes as well as many other animals of the colony. A number of the changes made in the original memoir have thereby been anticipated and others have been meanwhile forestalled by European naturalists.* Nevertheless, there is still much to be done in clearing up doubts respecting many species, and numerous changes have been made in the memoir, as now published, which appear to be justified by evidence now at hand. A point will be gained if renewed attention is directed to questions here raised, and science will be the beneficiary, whether the conclusions now enunciated are verified or falsified.

*Among the rectifications which would have been the first to appear in the memoir, if it had been published soon after the date of presentation, were new generic names for those since called *Plagiogenion*, *Neptotichthys*, and *Aucheroceros*, the elimination of *Ctenolobrus knoxi* from the *Labrinæ* and its association, in common with *Pimelepterus drewii* and *Girella percoides*, with *Girella simplex*, and the rectification of the synonymy of the *Uranoscopids* and *Leptoscopids*, on the basis established by Prof. Hutton. The anticipation is, however, compensated for by finding that I had independently reached the same conclusions as that excellent naturalist.

II.

PREVIOUS CATALOGUES OF NEW ZEALAND FISHES.

The fishes of few countries have been studied with more zeal and ability (so far as mere specific characters are concerned) than have those of New Zealand by resident naturalists. Some of the species of that group were among the first known of the southern hemisphere, and of no region of that hemisphere are the fishes now better known. Six catalogues of the species have appeared viz:

1. JOHANN REINHOLD FORSTER.

§ 1.

M. E. Blochii,, *Systema Ichthyologiae iconibus cx illustratum*.—Post obitum auctoris opus inchoatum absolvit correxit, interpolavit Io. Gottlob Schneider, Saxo.—Berolini, 1801.

In this work were first published from the MSS. of Forster his descriptions of new species.

§ 2.

Descriptiones Animalium que in itinere ad maris australis terras per annos 1772 1773 et 1774 susepto collegit observavit et delineavit Ioannes Reinhold Forster.... nunc demum editae auctoritate et impensis academiae litterarum regiae Berolinae curante Henrico Lichtenstein Berolini ex officina academica. MDCCXLIV.—Vendit Dummleri libraria. [8vo, xiii (1 l.) + 424 pp.]

In this work, Forster's descriptions are given approximately in the order in which they were made on the spot, and consequently they are brought together under two periods when Cook visited New Zealand during his second voyage, viz: March, May, and June, 1773 (pp. 112-148), and October, 1774 (pp. 301-310). 31 species were described.

2. DR. JOHN RICHARDSON.

§ 1.

Report on the present state of the Ichthyology of New Zealand. By John Richardson, M. D., F. R. S., etc., Inspector of Naval Hospitals, at Haslar. <Report of the twelfth meeting of the British Association for the Advancement of Science; held at Manchester in June, 1842, (pp. 12-30, 1843).

This contains 91 species arranged according to the classification of Cuvier.

§ 2.

List of fish hitherto detected on the coasts of New Zealand, by John Richardson, M. D., Inspector of Hospitals at Haslar; with the descriptions, by J. E. Gray, Esq., and Dr. Richardson, of the new species brought home by Dr. Reichenbach. <Travels in New Zealand; with contributions to the Geography, Geology, Botany, and Natural History of that country. By Ernest Dieffenbach, M. D., (vol. II, pp. 206-228, 1843).

The second edition of Richardson's report contains 92 nominal species, the addition to the former list being "(85) *Carcharias (Prionodon) maoo* Müller and Henle." Long descriptions of "(51) *Hemerocætes acanthorhynchus* C. and V." "(62) *Hemirhamphus marginatus* Lacépède," and "(73) *Rhombus plebius* Solander" are added. The descriptions are by Richardson, the only justification for the claim of "descriptions by J. E. Gray, Esq., and Dr. Richardson" being the incorporation of the brief notices of *Galaxias fasciatus* and *Anguilla Dieffenbachii* by Gray, originally published in his "Zoölogical Miscellany." There are various minor differences between the two catalogues. Several species admitted were not entitled to a place in the New Zealand fauna.

3. PIETER BLEEKER.

Over eenige Visschen van Van Diemensland. Door Dr. P. Bleeker te Batavia. Uitgegeven door de Koninklijke Akademie van Wetenschappen.....Amsterdam C. G. Van der Post. 1855. [4to, title + 31 pp., 1 folded pl.]

This memoir was prefaced by a comparative enumeration of the fishes of (1) Australia or "Nova Hollandia," (2) New Zealand, (3) Tasmania or Van Diemensland, (4) Norfolk island, and

(5) Auckland islands, and (6) the distribution of Australasian fishes beyond Australasia ("extra-Australasiatici"). The numbers of species attributed to the respective regions were as follows:

Nova Hollandia.....	236
Nova Zealandia	71
Diemenia.....	70
Insula Norfolkiae.....	8
Insula Aucklandiae.....	5
Extra-Australasiatici.....	103

Dr. Bleeker did not display in this memoir his usual familiarity with the literature, and manifested no acquaintance with the articles of Richardson on the fishes of New Zealand. Many of Forster's fishes were also overlooked.

4. FREDERICK WOLLASTON HUTTON (1).

Fishes of New Zealand. Catalogue, with diagnoses of the species. By Frederick Wollaston Hutton, Notes on the edible fishes, by James Hector, M. D., Wellington.—1872. [8vo, xvi, 133, ii pp., 12 pl., iii pp.]

141 native and 7 introduced species were described and 49 illustrated by outline figures on 12 plates.

5. R. A. A. SHERRIN.

Handbook of the fishes of New Zealand.—Prepared under the instructions of the Commissioner of Trade and Customs by R. A. A. Sherrin.—Auckland: Wilsons and Horton.—MDCCCLXXXVI. [8vo, 2 pl., iv, pp. 307, 1 folded map.]

A dictionary (pp. 9—128, 129—143) in which the principal (1) salt-water and (2) fresh-water species are noticed under their English names in alphabetical order, and a "List of Fishes of New Zealand" (pp. 298-307), are the chief features of the "Handbook." The work is that of a compiler and not of an original investigator, and as such is as reliable as could be reasonably expected.

6. FREDERICK WOLLASTON HUTTON (2).

List of the New Zealand fishes. By Professor F. W. Hutton. <Trans. N. Z. Inst, vol. xxii, pp. 275-285; 1889.

The list enumerates 226 species, "the arrangement followed being that of Dr. Günther's 'Study of Fishes.'" References are given "which show the evidence for the species being included in the list." It is a valuable and well-considered summary of what had been made known up to the date of publication.

III.

THE FORSTERIAN FISHES OF NEW ZEALAND.

I.

The first glimpse of the piscine fauna of New Zealand is due to Dr. John Reinhold Forster, who accompanied the celebrated Capt. Cooke on his second voyage, and visited New Zealand in 1773 and again in 1774. Forster made full descriptions, and his son George drew sketches of many fishes observed by him and gave them scientific names, but his own work embodying these observations remained unpublished for nearly three-quarters of a century. Meanwhile, however, Forster's manuscripts fell into the hands of Schneider, the editor and completer of Bloch's "Systema Ichthyologiae," and the new species of fishes were incorporated in the "Systema" generally with Foster's own names, but in some cases with new ones.

II.

The New Zealand fishes credited to Forster in the "Systema" were as follows; (1) the numbers in the left-hand column indicating the pages; (2) the names in the second column being those of Forster and Schneider, and (3) the names in the right-hand column being those for the present adopted.

SYSTEMA ICHTHYOLOGIE.

	<i>Old names.</i>	<i>Present names.</i>
2	<i>Lepadogaster pinnulatus</i> F	<i>Trachelochismus pinnulatus.</i>
24	<i>Scomber dentatus</i> F	<i>Thyrsites atun.</i>
37	{ <i>Scomber punctatus</i> F. B. S. } { <i>Gasterosteus punctatus</i> F. }	<i>Seriolella ?? punctata.</i>
41	{ <i>Callionymus monoptygius</i> B. S. } { <i>Callionymus acanthorhynchus</i> F. }	<i>Hemerocoetes acanthorhynchus.</i>
49	{ <i>Uranoscopus monoptygius</i> B. S. } { <i>Uranoscopus maculatus</i> F. }	<i>Genyagnus maculatus.</i>
53	<i>Enchelyopus bacchus</i> B. S., F	<i>Pseudophycis bacchus.</i>
54	<i>Enchelyopus colias</i> B. S., F	<i>Parapercis colias.</i>
56	{ <i>Phycis tinca</i> , var. B. S. } { <i>Gadus rhacinus</i> F. }	<i>Lotella rhacina.</i>
120	{ <i>Mugil albula</i> Forsteri	<i>Agonostomus forsteri.</i>
xxxii	{ <i>Mugil salmoneus</i> F	<i>Chanos salmoneus.</i>
121	{ <i>Mugil salmoneus</i> F	<i>Caulopsetta scapha.</i>
163	<i>Pleuronectes scapha</i> F	<i>Notoclinus fenestratus.</i>
173	<i>Blennius fenestratus</i> F	<i>Tripterygion tripinne.</i>
174	{ <i>Blennius tripennis</i> * F	<i>Acanthoclinus litoreus.</i>
xxxvi	{ <i>Blennius quadridactylus</i> B. S. } { <i>Blennius litoreus</i> F.	<i>Tripterygion varium.</i>
177	{ <i>Blennius quadridactylus</i> B. S. } { <i>Blennius litoreus</i> F.	<i>Sebastapistes cottooides.</i>
178	<i>Blennius varius</i> F	<i>Trachelochismus litoreus.</i>
196	{ <i>Synanceia papillosum</i> B. S. † } { <i>Scorpaena cottooides</i> F.	<i>Pseudolabrus miles.</i>
199	<i>Cyclopterus littoreus</i> F	<i>Pseudolabrus celidotus.</i>
264	{ <i>Labrus miles</i> B. S. } { <i>Labrus coccineus</i> F. }	<i>Pagrosomus auratus.</i>
265	<i>Labrus celidotus</i> F	<i>Coridodax pullus.</i>
266	{ <i>Labrus auratus</i> B. S. } { <i>Sciaena aurata</i> F.	<i>Polypyrrhon prognathus.</i>
288	{ <i>Scarus pullus</i> B. S. } { <i>Scarus pullus</i> F.	<i>Pseudanthias lepidopterus.</i>
301	{ <i>Epinephelus oxygeneios</i> B. S. } { <i>Perca prognatha</i> F.	<i>Latris ciliaris.</i>
302	{ <i>Epinephelus lepidopterus</i> B. S. } { <i>Perca lepidopterus</i> F.	<i>Latris lineata.</i>
310	{ <i>Anthias ciliaris</i> B. S. } { <i>Sciaena ciliaris</i> F.	<i>Cheilodactylus macropterus.</i>
342	{ <i>Cichla lineata</i> B. S. } { <i>Sciaena lineata</i> F.	<i>Esox saurus</i> (L.) F
342	{ <i>Cichla macroptera</i> B. S. } { <i>Sciaena macroptera</i> F.	<i>Scomeressox forsteri.</i>
394	<i>Esox alepidotus</i> (F.)	<i>Galaxias alepidotus.</i>
477	<i>Balistes scaber</i> F	<i>Monacanthus scaber.</i>
484	<i>Ophidium blacodes</i> B. S. ‡	<i>Genypterus blacodes.</i>
532	<i>Petromyzon cirrhatus</i> F	<i>Heptatrema cirrata.</i>
542	<i>Sciaena trutta</i> F	<i>Arripis trutta.</i>

III.

Forster's new work (*Descriptiones Animalium*, etc.) was not published till 1844, when it appeared (without the illustrations) under the editorship of Lichtenstein at Berlin. The descriptions and notes on the animals observed were arranged in a rough, chronological order, that is, nearly under the dates when the species were observed and described, but with some slight deviations therefrom.

* Not *tripinnis*, as it should have been written.

† P. xxxvii, "Pertinet ad Genus antecedens" [i. e., *Scorpaena*].

‡ Forster's name is not mentioned in connection with *O. blacodes*, which is also noticed from the Cape of Good Hope, as well as New Zealand.

FORSTER'S DESCRIPTIONES ANIMALIUM.

112....	<i>Petromyzon cirrhatus</i>	(1773—Apr. 8.)	<i>Heptatrema cirrata</i> .
114....	<i>Cyclopterus littoreus</i>	(1773—Apr. 7.)	<i>Trachelochismus littoreus</i> .
115....	<i>Ophidium blacodes</i>	(1773—Apr. 13.)	<i>Genypterus blacodes</i> .
117....	<i>Callionymus acanthorhynchus</i>		<i>Hemeroocoetes acanthorhynchus</i> .
118....	<i>Uranoscopus maculatus</i>		<i>Genyagnus maculatus</i> .
120....	<i>Gadus bacchus</i>		<i>Pseudophycis bacchus</i> .
122....	<i>Gadus colias</i>	(1773—Mart. 27.)	<i>Parapercis colias</i> .
124....	<i>Blennius fenestratus</i>	(1773—Maii. 27.)	<i>Notoclinus fenestratus</i> .
125....	<i>Blennius tripennis</i>	(1773—April 9.)	<i>Tripterygion tripinne</i> .
127....	<i>Blennius littoreus</i>	(1773—April 7.)	<i>Acanthoclinus littoreus</i> .
127....	<i>Blennius varius</i>	(1773—Iun. 4.)	<i>Tripterygion varium</i> .
128....	<i>Scorpaena cottoides</i>	(1773—Mart. 30.)	<i>Sebastapistes cottoides</i> .
130....	<i>Pleuronectes scapha</i>		<i>Caulopsetta scapha</i> .
131....	<i>Labrus cocineus</i>		<i>Pseudolabrus miles</i> .
133....	<i>Labrus celidotus</i>		<i>Pseudolabrus celidotus</i> .
134....	<i>Sciaena lineata</i>		<i>Latris lineata</i> .
136....	<i>Sciaena macroptera</i>		<i>Cheilodactylus macropterus</i> .
137....	<i>Sciaena ciliaris</i>		<i>Latris ciliaris</i> .
138....	<i>Perca lepidoptera</i>		<i>Pseudanthias lepidoptera</i> .
140....	<i>Gasterosteus punctatus</i>		<i>Seriola ?? punctata</i> .
141....	<i>Scomber dentex</i>		<i>Thryssites atun</i> .
142....	<i>Esox alepidotus</i>		<i>Galaxias alepidotus</i> .
143....	<i>Esox saurus</i>		<i>Scomberesox forsteri</i> .
145....	<i>Mugil albula</i>		<i>Agonostomus forsteri</i> .
147....	<i>Sciaena trutta</i>		<i>Arripis trutta</i> .
152....	<i>Balistes scaber</i>		<i>Monacanthus scaber</i> .
292....	<i>Sciaena cultrata</i>	(1774—Octobr. 10.) Norfolk Island.	<i>Bathystethus cultratus</i> .
301....	<i>Cyclopterus pinnulatus</i>	(1774—Octobr. 23.)	<i>Trachelochismus pinnulatus</i> .
304....	<i>Gadus rhacinus</i>	(1774—Octobr. 29.)	<i>Lotella rhacina</i> .
306....	<i>Sparus pullus</i>	(Octobr. 28.)	<i>Coridodax pullus</i> .
307....	<i>Sciaena aurata</i>	(Octobr. 18.)	<i>Pagrosomus auratus</i> .
309....	<i>Perca prognathus</i>	(Octobr. 15.)	<i>Polypyron prognathus</i> .

IV.

It is to be remarked that some of the species described by Forster have each received two names, Schneider, with the propensity common in his time to change a name because it did not seem to be as good a one as could be given, substituting for Forster's one of his own which suited him better. Nevertheless Forster's, in every case but one,* was also given. Forster's names were therefore actually published at the same time as Schneider's and in connection with his (Forster's) own descriptions. Whose names then shall be adopted, Forster's or Schneider's? Opinion has differed as to this point, some accepting Forster's and others Schneider's.

* *Ophidium blacodes* was Forster's name, but not accredited to him, and Schneider had seen a specimen of the species from the Cape of Good Hope.

Cuvier and Valenciennes sometimes adopted Forster's*, and sometimes (the propensity to change names still continued) gave new ones, because, for some reason or other, they were not satisfied with any of the old ones.

Richardson† also generally adopted Forster's names§, deviating from this course only in four instances, once in adopting one of Schneider's names||, again in preferring a manuscript name given by Solander to one published by Forster||, a third time in taking a later name of Lacépède**, and, in another case, deferring to Cuvier and Valenciennes††.

Günther generally accepted Forster's names, but in one instance adopted Schneider's‡‡, and for other species took later names.

The Güntherian nomenclature was adopted by Prof. Hutton and Prof. Hector in the Catalogue of the Fishes of New Zealand, and the names so adopted are given in the synonymy of the species following. Later, Prof. Hutton revived several of Forster's names previously generally neglected.

As the conflicting names of Forster and Schneider were necessarily published at the same moment, being each printed for the first time on the same page, neither has the priority, and the name adopted by the first succeeding naturalist may, I think, be justly retained. Drs. Jordan and Eigenmann have thought otherwise, and, in the case of *Polyprion*, adopted Schneider's name *oxygeneios* instead of *prognathus*, but as Drs. Jordan and Gilbert had originally used that name for the "*P. cernium*," the southern species may retain that of *P. prognathus* later given to it. Drs. Jordan and Gilbert, in another connection (involving the question of adoption of *Cephalacanthus* or *Dactylopterus*, the former occurring on p. 323 and the latter on p. 325 of the same work), have declared for *Cephalacanthus* instead of the generally adopted *Dactylopterus*, and enunciated the proposition that "the law of primogeniture applies to twins"§§. This is granted. But what has the law of primogeniture to do with the question at issue? In the case of twins, as the learned doctors well know, one always precedes the other by an appreciable interval of time, but in the case of two names first printed on the same signature, the publication of the two is necessarily simultaneous, and no question of primogeniture can arise. Under the present circumstances, then, the adoption of one or the other name is open to the next naturalist who has to deal with the species, and I shall follow him. My own preference would be to adopt Forster's names, as he was the original investigator and generally his names were more apt, but, it seems to me, the name to be used was fixed by the action of the first user.

HEPATREMIDÆ.

Heptatrema cirrata.|||

Petromyzon cirrhatus Bloch and Schneider, Systema Ich., p. 532, 1801; Forster, Desc. Animal. cur. Lichtenstein, p. 112, 1844.

Heptatrema dombeyi Richardson, Rep. Br. A. A. S., 1842, p. 30.

Bdellostoma cirratum Hutton, Fishes New Zealand, p. 87, 1872 (1889, No. 223).

Habitat in mari alliente insulam australem Novae Zealandiae, in portu obscurō et in Aestuario Reginae Charlottae.—F.

*(1) *Centropristes trutta* (2, 54)=*Sciaena trutta* F.; (2) *Percis colias* (3, 273)=*Gadus colias* F.; (3) *Clinus littoreus* (11, 389)=*Blennius littoreus* F.; (4) *Tripterygion fenestratum* (11, 410)=*Blennius fenestratus* F.; (5) *T. varium* (11, 414)=*B. varius* F.; (6) *Hemerocoetes acanthorhynchus* (12, 311)=*Callionymus acanthorhynchus* F.; (7) *Odax pullus* (14, 304)=*Scarus pullus* F.

†(1) *Polyprion cernium* (3, 24)=*Perca prognatha*, F.=*Epinephelus oxygeneios*; (2) *Uranoscopus forsteri* (3, 318)=*U. maculatus* F.=*U. monopterygius* B. S.; (3) *Tripterygion forsteri* (11, 415)=*Blennius tripennis* F.

‡Rep. 12, meet. Brit. A. A. S., pp. 12-30, 1843; Dieffenbach's Travels in N. Z., vol. 2, pp. 206-228, 1843.

§*Serranus lepidopterus*, *Centropristes trutta*, *Percis colias*, *Uranoscopus maculatus*, *Scorpaena cottooides*, *Cheilodactylus macropterus*, *Latriss lineata*, *L. ciliaris*, *Clinus littoreus*, *Tripterygion varium*, *T. fenestratum*, *Hemerocoetes acanthorhynchus*, *Julis celidotus*, *Odax pullus*, *Galaxias aequalis*, *Lota baccha*, *Lota rhacina*, *Rhombus ? scapha*, *Lepadogaster pinnulatus*, *Gobiesox littoreus*, *Ophidium blacodes*, *Monacanthus scaber*.

||*Julis miles*=*Labrus miles* B. S.=*L. coccineus* F.

¶*Heptatrema dombeyi* (ex Lac.) = *Petromyzon cirrhatus* F.

***Pagrus latus* (Rich. Annals, IX, p. 392)=*Sciaena lata* Sol, in place of *Sc. aurata* F.

††*Tripterygion forsteri* (C. V.) = *Blennius tripennis* F.

‡‡*Anema monopterygium* (2, 230)=*Uranoscopus monopterygius* B. S.=*U. maculatus* F.

§§Proc. U. S. Nat. Mus., Vol. v, p. 573.

¶¶Omni vel specie rectae rationis, qui *Pleurotomam similiaque vocabula neutralis generis habent. Conferatur τεπιτροπος.*" Hermannsen, Indicis Generum Malacozoorum Primordia, vol. i, 1846, p. XIII.

GALAXIIDÆ.

Galaxias alepidotus.

Esox alepidotus *Bloch and Schneider*, Syst. Ich., p. 395, 1801; *Forster*, Desc. Animal. cur. Lichtenstein, p. 142, 1844.

Galaxias alepidotus *Hutton*, Fishes New Zealand, p. 58, 1872

Habitat in lacubus aquae dulcis et rivulis insulae australis Novae Zealandiae, hamo captus. *Sapidus* et a nautis vocatus *trutta* (the trout).—F.

EXOCOETIDÆ.

Scomberesox forsteri.

Esox saurus (*Lac.*) *Bloch and Schneider*, Syst. Ich., p. 394, 1801; *Forster*, Desc. Animal. cur. Lichtenstein, p. 143, 1844.

Scomberesox forsteri (*Cur. and Val.*) *Hutton*, Fishes New Zealand, p. 53, 1872.

Habitat in mari alluente Novam Zealandiam; semper post tempestuosum tempus a mari in littus eiectus repertus.

MUGILIDÆ.

Agonostomus forsteri.

Mugil albula *Forsteri* *Bloch and Schneider*, Syst. Ich., p. xxxii, 120, 1801.

Mugil albula *Forster*, Desc. Animal. cur. Lichtenstein, p. 145, 1844.

Mngil fosteri *Cuv. and Val.*, Hist. Nat. Poissos, Vol. 11, p. 141.

Agonostoma forsteri *Hutton*, Fishes New Zealand, p. 37, 1872 (1889, No. 124).

Habitat in mari alluente insulam australem Novae Zealandiae.—F.

Schneider, to whom the name *forsteri* is generally attributed, merely recorded it as the *Mugil albula* of Forster; Cuvier and Valenciennes gave the specific name *forsteri*.

Dr. Günther (Vol. III, p. 461) has needlessly changed the name *Agonostomus* (Bennett, P. Z. S., 1830, p. 166) to *Agonostoma*, although he later retained the spelling of the analogous names *Plecostomus* (Vol. V, p. 230), *Chatostomus* (Vol. V, p. 240), *Andstomus* (Vol. V, p. 303), etc.

CARANGIDÆ.

Seriolella ?? punctata ?

Scomber punctatus = *Gasterosteus punctatus* *Bloch and Schneider*, Syst. Ich., p. 37, 1801.

Gasterosteus punctatus *Forster*, Desc. Animal. cur. Lichtenstein, p. 140, 1844.

Habitat in mari alluente insulam australem Novae Zealandiae, hamo captus, at non fundo, vero in media regione, locis tranquillis, prope rivulos aquae dulcis; nautis *Scomber* (*Mackrel*) dictus.—F. Mart. 30, 1773.

Like others I have been unable to identify the *Gasterosteus punctatus* F. Most authors have quietly ignored it. It is only referred to by Prof. Hutton (Trans. N. Z. Inst., vol. IX, p. 353).

GEMPYLIDÆ.

Thyrsites atun.

Scomber dentatus (F.) *Bloch and Schneider*, Syst. Ich., p. 24, 1801.

Scomber dentex *Forster*, Desc. Animal. cur. Lichtenstein, p. 141, 1844.

Thyrsites atun *Hutton*, Fishes New Zealand, p. 13, 1872.

Habitat in mari, insulam australem Novae Zealandiae alluente.—F.

The species had been previously described by Euphrasen as *S. atun*.

SPARIDÆ.

Pagrosomus auratus.

Labrus auratus (= *Sciaena aurata*, F.) *Bloch and Schneider*, Syst. Ich., p. 266, 1801.

Sciaena aurata *Forster*, Desc. Animal. cura Lichtenstein, p. 307, 1844.

Pagrus latus *Rich.*, Rep. Br. A. A. S., 1842, p. 209.

Pagrus unicornis *Hutton*, Fishes New Zealand, p. 6, 1872.

S. Mis. 169—7

Habitat in Aestuario Reginae Charlottae, in Nova Zealandia.—F.

The specific name *auratus*, being the first given, should be adopted, and as the species differs from the Spari and Pagri by the obsolescence of the inner lateral cranial crests, the new generic name *Pagrosomus* may be given.

ARRIPIDIDÆ.

Arripis trutta.

Sciaena trutta (F.) *Bloch* and *Schneider*, Syst. Ich., p. 394, 1801; *Forster*, Desc. Animal. cura. Lichtenstein, p. 147, 1844.

Centropristes trutta *Richardson*, Rep. Br. A. A. S., 1842, p. 15.

Centropristes mulloides *Richardson*, Rep. Br. A. A. S., 1842, p. 16.

Centropristes sapidissimus *Richardson*, Rep. Br. A. A. S., 1842, p. 16.

Arripis salar *Hutton*, Fishes New Zealand, p. 2, 1872.

Habitat in mari alluente Fretum Cookii et intrante Aestuarium Reginae Charlottae.—F.

SERRANIDÆ.

Pseudanthias lepidopterus.

Epinephelus lepidopterus (= *Perca lepidoptera* F.) *Bloch* and *Schneider*, Syst. Ich., p. 302, 1801.

Perca lepidoptera *Forster*, Desc. Animal. cur. Lichtenstein, p. 138, 1844.

Serranus lepidopterus *Rich.*, Rep. Br. A. A. S. 1842, p. 15.

Scorpius hectori *Hutton*, Fishes New Zealand, p. 4, 1872.

Habitat in mari alluente insulam australem Novae Zealandiae.—F

Polypriion prognathus.

Epinephelus oxygencios (= *Perca prognatha* F.) *Bloch* and *Schneider* Syst. Ich., p. 301, 1801.

Perca prognathus *Forster* Desc. Animal. cur. Lichtenstein, p. 309, 1844.

Oligorus gigas *Hutton* Fishes New Zealand, p. 1, 1872.

Polypriion prognathus *Günther* Ann. Mag. Nat. Hist. (5.), vol. xx, p. 236, 1887.

Habitat in Aestuario Reginae Charlottae.—F.

The identity of *Oligorus gigas* and *Perca prognathus* was first recognized by Prof. Hutton, (Trans. N. Z., Inst., Vol. v, p. 259), but, influenced by undue respect for the opinion of Dr. Günther, he retained it in the genus *Oligorus* instead of restoring it to the genus *Polypriion*, to which Cuvier and Valenciennes, with their superior knowledge, had previously properly referred it.

LABRIDÆ.

Pseudolabrus miles.

Labrus miles (= *L. coccineus* F.) *Bloch* and *Schneider* Syst. Ich., p. 264, 1801

Labrus coccineus *Forster* Desc. Animal. cur. Lichtenstein, p. 131, 1844.

Julis miles *Rich.* Rep. Br. A. A. S., 1843, p. 24, 1843.

Labrichthys psittacula *Hutton* Fishes New Zealand, p. 43, 1872.

Habitat in mari alluente insulam australem Novae Zealandiae.—F

Pseudolabrus celidotus.

Labrus celidotus (F.) *Bloch* and *Schneider* Syst. Ich. p. 265, 1801.

Labrus celidotus *Forster* Desc. Animal. cur. Lichtenstein, p. 133, 1844.

Julis celidotus *Rich.* Rep. Br. A. A. S., 1842, p. 24, 1843.

Pseudolabrus celidotus *Blkr.* Versl. en Med. K. Akad. Wett. (Amsterdam), Vol. xv, p. 444, 1863.

Labrichthys celidota *Hutton* Fishes New Zealand, p. 42, 1872.

Habitat in mari alluente insulam australem Novae Zealandiae.—F.

Coridodax pullus.

Scarus pullus (= *Sparus pullus* F.) *Bloch* and *Schneider* Syst. Ich., p. 288, 1801.

Sparus pullus *Forster* Desc. Animal. cur. Lichtenstein, p. 306, 1844.

Odax pullus *Cuv. et Val.* Hist. Nat. Poiss., vol. XIV, p. 304.

Coridodax pullus *Hutton* Fishes New Zealand, p. 44, 1872.

Habitat in Aestuario Reginae Charlottae in Nova Zealandia.—F.

HAPLODACTYLIDÆ.

Chilodactylus macropterus.

Cichla macroptera (=Sciæna macropt. F.) *Bloch and Schneider* Syst. Ich., p. 342, 1801.
Sciæna macroptera *Forster* Desc. Animal. cur. Lichtenstein, p. 136, 1844.
Cheilodactylus macropterus *Rich.* Trans. Zool. Soc., Vol. III, p. 101.
Chilodactylus macropterus *Hutton* Fishes New Zealand, p. 8, 1872.

Habitat in mari Novae Zealandiae insulam australem alluente.—F.

Latriss ciliaris.

Anthias ciliaris (=Sciæna ciliaris F.) *Bloch and Schneider* Syst. Ich., p. 310, 1801.
Sciæna ciliaris *Forster* Desc. Animal. cur. Lichtenstein, p. 137, 1844.
Latris ciliaris *Rich.* Trans. Zool. Soc., Vol. III, p. 115.
Latris ciliaris *Hutton* Fishes New Zealand, p. 9, 1872.

Habitat in mari alluentem insulam australem Novae Zealandiae.—F.

Latris lineata.

Cichla lineata (=Sciæna lineata F.) *Bloch and Schneider* Syst. Ich., p. 342, 1801.
Sciæna lineata *Forster* Desc. Animal. cur. Lichtenstein, p. 134, 1844.
Latris hecateia *Rich.* Trans. Zool. Soc., Vol. III, p. 106, pl. 6, f. 1 (see p. 115).
Latris hecateia *Hutton* Fishes New Zealand, p. 8, 1872.

Habitat in mari alluente insulam australem Novae Zealandiae.—F.

SCORPÆNIIDÆ.

Scorpæna cottooides.

Synanceja papilloso (sic!)=*Scorpæna cottooides* F.) *Bloch and Schneider* Syst. Ich., p. 196, 1801.
Scorpæna papillosa *Bloch and Schneider* Syst. Ich., p. xxxvii, 1801.*
Scorpæna cottooides *Forster* Desc. Animal. cur. Lichtenstein, p. 128, 1844.
Scorpæna cottooides *Rich.* Rep. Br. A. A. S., p. 18, 1843.
Scorpæna cruenta *Hutton* Fishes New Zealand, p. 10, 1872.

Habitat in mari alluente Novam Zealandiam.—F.

URANOSCOPIIDÆ.

Genyagnus maculatus.

Uranoscopus monopterygius (=Uranoscopus maculatus F.) *Bloch and Schneider* Syst. Ich., p. 49, 1801.
Uranoscopus maculatus *Forster* Desc. Animal. cur. Lichtenstein, p. 118, 1844.
Uranoscopus maculatus *Rich.* Ann. Nat. Hist., Vol. IX, p. 207.
Kathetostoma monopterygium *Hutton* Fishes New Zealand, p. 23, 1872.

Habitat in australe insula Novae Zealandiae [etc.].—F.

PERCOPHIDÆ.

Parapercis colias.

Enchelyopus colias (=G. C., F.) *Bloch and Schneider* Syst. Ich., p. 54, 1801.
Gadus colias *Forster* Desc. Animal. cur. Lichtenstein, p. 122, 1844.
Percis colias *Cuv. et Val.* Hist. Nat. Poiss., Vol. III, p. 273. *Hutton* Fishes New Zealand, p. 25, 1872.

Habitat in mari alluente insulam australem Novae Zealandiae [etc.].—F.

HEMEROCETIDÆ.

Hemerocetes acanthorhynchus.

Callionymus monopterygius (=Callionymus acanthorhynchus) *Bloch and Schneider* Syst., Ich., p. 41, 1801.
Callionymus acanthorhynchus *Forster* Desc. Animal. cur. Lichtenstein, p. 117, 1844.
Hemerocetes acanthorhynchus *Cuv. et Val.* Hist. Nat. Poiss., Vol. XII, p. 311. *Hutton* Fishes New Zealand,
 p. 37, 1872.

Habitat in mari alluente insulam australem Novae Zealandiae.—F.

* *Scorpæna* "10, Papillosa Forsteri. (Male ad sequens genus [i. e. *Synanceia*] relata.)"—p. xxxvii.

CLINIDÆ.

Notoclinus fenestratus.

Blennius fenestratus (F.) *Bloch and Schneider* Syst. Ich., p. 173, 1801; *Forster* Desc. Animal. cur. Lichtenstein, p. 124, 1844.

Tripterygion fenestratum *Cuv. et Val.* Hist. Nat. Poiss., Vol. xi, p. 410; *Hutton* Fishes New Zealand, p. 0, 1872 (1889, No. 118).

Habitat in insula australi Novae Zealandiae inter saxa ad ostia rivulorum aquae dulcis [etc.].—F.

Tripterygion tripinne.

Blennius tripennis (F.) *Bloch and Schneider* Syst. Ich., p. 174, 1801.

Blennius tripennis *Forster* Desc. Animal. cur. Lichtenstein, p. 125, 1844.

Tripterygium Forsteri (*Cuv. et Val.*) *Hutton* Fishes New Zealand, p. 31, 1872.

Habitat in insula australe Novae Zealandiae [etc.].—F.

Tripterygion varium.

Blennius varius *Bloch and Schneider* Syst. Ich., p. 178, 1801; *Forster* Desc. Animal. cur. Lichtenstein, p. 127, 1844.

Tripterygion varium *Cuv. et Val.* Hist. Nat. Poiss., Vol. xi, p. 415; *Hutton* Fishes New Zealand, p. 33, 1872.

Habitat ad littora saxosa insulae australis Novae Zealandiae.—F.

ACANTHOCLINIDÆ.

canthoclinus litoreus.

Blennius quadridactylus (= *Blennius littoreus*) *Bloch and Schneider* Syst. Ich., p. 177, 1801.

Blennius littoreus *Forster* Desc. Animal. cur. Lichtenstein, p. 127, 1844.

Clinus littoreus *Cuv. et Val.* Hist. Nat. Poiss., Vol. xi, p. 389.

Acanthoclinus littoreus *Hutton* Fishes New Zealand, p. 34, 1872 (1889, No. 119).

Habitat ad littora prope ostia rivulorum aquae dulcis in australi insula Nova Zealandiae.—F.

GADIDÆ.

Pseudophycis bacchus.

Enchelyopus bacchus (= G. B. F.), *Bloch and Schneider* Syst. Ich., p. 53, 1801.

Gadus bacchus, *Forster* Desc. Animal. cur. Lichtenstein, p. 120, 1844.

Lota (= *Gadus bacchus*) *Cuv.* Regne An. (2d ed.), Vol. II, p. 334, 1829.

Lotella bacchus *Hutton* Fishes New Zealand, p. 46, 1872.

Pseudophycis bacchus *Hutton* Trans. N. Z. Inst., Vol. xxii, p. 282 (List, 1889, No. 150).

Habitat in mari alluente insulam australem Novae Zealandiae, etc.—F.

Lotella rhacina.

Phycis tinea var. (= *Gadus rhacinus* F.), *Bloch and Schneider* Syst. Ich., p. 56, 1801.

Gadus rhacinus *Forster* Desc. Animal. cur. Lichtenstein, p. 304, 1844.

Lotella rhacina *Hutton* Fishes New Zealand, p. 46, 1872 (List, 1889, No. 152).

Habitat in Aestuario Reginae Charlottae in Nova Zealandia.—F.

OPHIDIIDÆ.

Genypterus blacodes.

Ophidium blacodes *Bloch and Schneider* Syst. Ich., p. 484, 1801; *Forster* Desc. Animal. cur. Lichtenstein, p. 115, 1844.

Ophidium blacodes *Cuv.* Regne An., Vol. II, p. 359, 1829.

Genypterus blacodes *Hutton* Fishes New Zealand, p. 48, 1872.

Habitat in mari quod alluit insulam australem Novae Zealandiae, etc.—F.

PLEURONECTIDÆ.

Caulopsetta scapha.

Pleuronectes scapha (F.) *Bloch and Schneider* Syst. Ich. cur. Lichtenstein, p. 163, 1801; *Forster* Desc. Animal. cur. Lichtenstein, p. 130, 1844.

Rhombus ? scapha *Rich Rep. Br. A. A. S.*, 1842, p. 27, 1843.

Pseudorhombus seaphus *Hutton* Fishes New Zealand, p. 57, 1872.

Habitat in mari alluente insulam australem Novae Zealandiae.—F.

GOBIESOCIDÆ.

Trachelochismus pinnulatus.

Lepadogaster pinnulatus (= *Cyclopterus pinnulatus* F.) *Bloch and Schneider* Syst. Ich. cur. Lichtenstein, p. 2, 1801.

Cyclopterus pinnulatus *Forster* Desc. Animal. cur. Lichtenstein, p. 301, 1844.

Lepadogaster pinnulatus *Rich. An. Rep. Br. A. A. S.*, 1842, p. 27, 1843.

Trachelochismus pinnulatus *Hutton* Fishes New Zealand, p. 40, 1872.

Habitat in Aestuario Reginae Charlottae in Nova Zealandia, etc.—F.

Trachelochismus litoreus.

Cyclopterus littoreus (F.) *Bloch and Schneider* Syst. Ich., p. 199, 1801, *Forster* Desc. Animal, cur. Lichtenstein, p. 114, 1844.

Gobiesox (littoreus) *Cuv. Regne An. (2 ed.)*, v. II, p. 345, 1829.

Habitat in insula australi Novae Zealandiae.—F.

BALISTIDÆ.

Monacanthus scaber.

Balistes scaber (F.) *Bloch and Schneider* Syst. Ich., p. 478, 1801. *Forster* Desc. Animal. cur. Lichtenstein, p. 152, 1844.

Monacanthus scaber *Rich. Rep. Br. A. A. S.* 1842, p. 29, 1843.

Monacanthus convexirostris *Hutton* Fishes, New Zealand, p. 71, 1872.

Habitat in mari alluente Novam Zealandiam in Aestuario Reginae Charlottae (etc.).—F.

IV.

RICHARDSON'S CATALOGUES OF NEW ZEALAND FISHES.

Dr. (afterwards Sir John) Richardson contributed two slightly different lists of the fishes of New Zealand, as already indicated (see p. —). Many species are duplicated, old notices by Solander being admitted. The identification of some of these is impossible to one not having access to the original supposed to be still in the British Museum. As a correlation of the two will be interesting to some, they are here given in parallel columns, the left-hand column giving the pages and numbers of the report published by the British Association for the Advancement of Science, and the right those of the enumeration in Dieffenbach's works.

PERCOIDÆ.

<i>Serranus lepidopterus</i>	15, 1	206, 1	<i>Pseudanthias lepidopterus</i> .
<i>Polypyron cernuum</i>	2	2	<i>Polypyron prognathus</i> .
<i>Centropristes trutta</i>	3	3	<i>Arripis trutta</i> .
<i>Centropristes mulloides</i>	16, 4	4	<i>Arripis trutta</i> .
<i>Centropristes sapidissimus</i>	5	5	<i>Arripis trutta</i> .
<i>Aplodactylus meandratus</i>	6	207, 6	<i>Haplodactylus meandratus</i> .
<i>Percis colias</i>	7	7	<i>Parapercis colias</i> .
<i>Percis nichemera</i>	8	8	<i>Parapercis colias</i> .
<i>Uranoscopus maculatus</i>	17, 9	9	<i>Genyagnus maculatus</i> .
<i>Upeneus vlamingii</i>	10	10	<i>Upeneoides vlamingii</i> .
<i>Upeneus porosus</i>	11	11	<i>Upeneichthys porosus</i> .

COTTOIDEÆ.

<i>Trigla papilionacea</i>	18, 12	12	<i>Trigla kumu</i> .
<i>Scorpæna cardinalis</i>	13	208, 13	<i>Scorpæna cardinalis</i> .
<i>Scorpæna cottooides</i>	14	14	<i>Scorpæna cottooides</i> .
<i>Scorpæna plebeia</i>	15	15	
<i>Scorpæna cruenta</i>	16	16	<i>Scorpæna cottooides</i> .
<i>Sebastes percoides</i>	17	17	<i>Sebastapistes percoides</i> .

SCLENOIDEÆ.

<i>Cheilodactylus carponemus</i>	18	18	<i>Cheilodactylus carponemus</i> .
<i>Cheilodactylus macropterus</i>	19, 19	19	<i>Cheilodactylus macropterus</i> .
<i>Latriss ? salmonea</i>	20	209, 20	<i>Latriss lineata?</i>
<i>Latriss lineata</i>	27	21	<i>Latriss lineata</i> .
<i>Latriss ciliaris</i>	22	22	<i>Latriss ciliaris</i> .

SPAROIDEÆ.

<i>Pagrus guttulatus</i>	20, 23	23	<i>Pagrosomus auratus</i> .
<i>Pagrus micropterus</i>	24	24	<i>Pagrosomus auratus</i> .
<i>Pagrus latus</i>	25	25	<i>Pagrosomus auratus</i> .

SCOMBEROIDEÆ.

<i>Scomber (scombrus) solandris</i>	26	26*	<i>Scomber australasicus</i> .
<i>Thyrsites atun</i>	27	27†	<i>Thyrsites atun</i> .
<i>Gempylus solandris</i>	28	210, 28‡	<i>Promethichthys prometheus</i> .
<i>Chorinemus forsteri</i>	21, 29	31§	<i>Sombroides lisan</i> .
<i>Trachurus Novae Zelandiae</i>	30	32	<i>Trachurus trachurus</i> .
<i>Trachurus ? clupeoides</i>	31	33	<i>Trachurus trachurus</i> .
<i>Caranx lutescens</i>	32	34	<i>Caranx georgianus</i> .
<i>Caranx sinus-obscuri</i>	33	35	<i>Trachurus trachurus</i> .
<i>Caranx platinoides</i>	34	36	
<i>Caranx georgianus</i>	35	0	<i>Caranx georgianus</i> .

SIGANOIDEÆ.

<i>Acanthurus triostegus</i>	22, 36	211, 39	<i>Feuthis triostegus</i> .
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MUGLIOIDEÆ.

<i>Mugil forsteri</i>	37	40	<i>Agonostomus forsteri</i> .
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GOBIOIDEÆ.

<i>Clinus littoreus</i>	38	41	<i>Acanthoclinus littoreus</i> .
<i>Acanthoclinus fuscus</i>	39	42	<i>Acanthoclinus littoreus</i> .
<i>Cristiceps australis</i>	40	43	<i>Cristiceps australis</i> .
<i>Tripterygion nigripinne ¶</i>	23, 41	44	<i>Tripterygion varium</i> .
<i>Tripterygion varium</i>	42	45	<i>Tripterygion varium</i> .
<i>Tripterygion forsteri</i>	43	212, 46	<i>Tripterygion tripinne</i> .
<i>Tripterygion fenestratum</i>	44	47	<i>Notoclinus fenestratus</i> .
<i>Tripterygion capito</i>	45	48	<i>Tripterygion varium</i> .
<i>Eleotris gobioides</i>	46	49	<i>Gobiomorphus gobioides</i> .
<i>Eleotris radiata</i>	47	50	<i>Eleotris radiata</i> .
<i>Eleotris basalis</i>	48	50 **	<i>Gobiomorphus gobioides</i> .
<i>Hemerocetes acanthorhynchus</i>	49	51 ††	<i>Hemerocetes acanthorhynchus</i> .

* *Scomber loo*.† *Thyrsites atun*, var. *altivelis*.‡ *Gempylus solandri*.§ “29. *Histiophorus* — ?”“30. *Nauerates* — ?”|| “37. *Seriola cultrata*” (p. 210).“38. *Capros australis*” (p. 211).¶ *T. nigripinne* in R. B. A. A. S., p. 23.

** 50 duplicated and second numbered “50*.”

†† A long description of *H. a.* is given (pp. 212-218).

	LABROIDEÆ.	
<i>Julis</i> ♀ <i>rubiginosus</i>	51.....	53.....
<i>Labrus</i> <i>pœciliopleura</i>	24, 50.....	218, 52.....
<i>Julis notatus</i>	52.....	54.....
<i>Julis miles</i>	53.....	55.....
<i>Julis celidotus</i>	54.....	56.....
<i>Odax pullus</i>	25, 55.....	58*.....
<i>Odax</i> ♀ <i>vittatus</i>	56.....	59†.....
		Pseudolabrus celidotus.
		Pseudolabrus celidotus?
		Pseudolabrus celidotus.
		Pseudolabrus miles.
		Pseudolabrus celidotus.
		Coridodax pullus.
		Odax vittatus.
	CYPRINOIDEÆ.	
<i>Leuciscus</i> ♀ <i>lavaretoides</i>	57.....	60†.....
		Gonorhynchus Greyi.
	ESOCIDÆ.	
<i>Galaxias alepidotus</i>	58.....	219, 61.....
<i>Galaxias fasciatus</i>	59.....	221, 63§.....
<i>Mesites attenuatus</i>	26, 60.....	0
<i>Sairis scombroides</i>	61.....	221, 64.....
<i>Hemiramphus marginatus</i>	62.....	219, 62.....
<i>Exocetus</i> ♀ <i>subpellucens</i>	63.....	221, 65¶.....
		Galaxias alepidotus.
		Galaxias fasciatus.
		Galaxias attenuatus.
		Scomberesox forsteri.
		Hemiramphus intermedius.
		Exocetus micropterus?
	CLUPEOIDEÆ.	
<i>Clupea lata</i>	64.....	221, 68.....
		Clupea sagax ?
	GADOIDEÆ.	
<i>Lota baccha</i>	65**.....	221, 69.....
<i>Lota rhacina</i>	27, 70.....	222, 70.....
<i>Brosmius venustus</i>	71.....	71.....
		Pseudophycis bacchus.
		Lolella rhacina.
		*
	PLATESSOIDEÆ.	
<i>Rhombus</i> ? <i>scapha</i>	72.....	72†.....
<i>Rhombus plebeius</i>	73.....	73.....
		Caulopsetta scapha.
		Rhombosolea plebeia
	DISCOBOLI.	
<i>Lepadogaster pinnulatus</i>	74.....	225, 74.....
<i>Gobiesox littoreus</i>	28, 75.....	75.....
		Trachelochismus pinnulatus.
		Trachelochismus litoreus.
	ANGUILLIFORMES.	
<i>Anguilla australis</i>	76.....	0†.....
<i>Anguilla dieffenbachii</i>	77.....	77.....
<i>Ophidium blacodes</i>	78.....	226, 78.....
		Anguilla australis.
		Anguilla australis.
		Genypterus blacodes.
	LOPHOBRANCHI.	
<i>Hippocampus abdominalis</i>	79.....	79.....
		Hippocampus abdominalis.
	PLECTOGNATHI.	
<i>Tetraodon hamiltoni</i>	80.....	80§.....
<i>Monacanthus scaber</i>	29, 81.....	81.....
		Amblyrhynchotus richel.
		Monacanthus scaber.
	CHIMÆRIDÆ.	
<i>Callorhynchus antarcticus</i>	82.....	82.....
		Callorhynchus antarcticus.
	SCYLLIA.	
<i>Seyllium</i> ♀ <i>lima</i>	83.....	83.....
		Cephaloseyllum laticeps, pt. ?
	CARCHARIAE.	
<i>Carcharias</i> (<i>Prionodon</i>) <i>melanopterus</i>	84.....	227, 84
		Carcharhinus brachyurus, pt. ?

* "57. *Julis* ♀ *prasiophthalmus*."† "60. *Leuciscus* (*Ptycholepis*) *salmoneus*."

|| Omitted and not at all referred to.

** There are no numbers between 65 and 70.

†† *Anguilla australis* not referred to.§§ "80. *Tetraodon hamiltoni*, sp. nov.," not described. ||| "85. *Carcharias* (*Prionodon*) *maoo*."† "59. *Odax vittatus*."

§ Misplaced.

¶ "66, 67. *Exocetus exiliens et volitans*.—Auct."†† "72. *Platessa* ♀ (*Rhombus* ?) *scapha*.""76. *Echeneis naucrates*, L." under "faun. Echeneideæ."

	SPINACES.		
<i>Acanthias</i> ? <i>maculatus</i>	85.....	86*.....	<i>Squalus acanthias</i> ?
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<i>Rhinobates</i> (<i>Syrrhina</i>) <i>banksii</i>	86.....	87.....	<i>Rhinobatus banksii</i> .
<i>Trygonorhina</i> <i>fasciata</i>	87.....	88.....	<i>Trygonorhina fasciata</i>
	RAIÆ.		
<i>Raia</i> <i>nasuta</i>	88.....	89.....	<i>Raia nasuta</i> .
	TRYGONES. †		
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	MYLIOBATIDES.		
<i>Myliobatis</i> <i>nieuhofii</i>	90.....	91.....	<i>Aetobatus tenuicaudatus</i> .
	CYCLOSTOMI.		
<i>Heptatremma</i> <i>dombeyi</i>	91.....	228, 92.....	<i>Heptatremma</i> <i>cirrata</i> .

* "86. *Acanthias maculatus*" without "?".

[†] Family name omitted in report.

† "90. *Tæniura lymma*" inserted under "fam. TRYGONES."

So far as some of the foregoing species are attributed to New Zealand by Richardson, they were so done through misidentifications, and the species really represented in the island are indicated in the second column.

NEW ZEALAND FAMILIES OF FISHES COMPARED WITH BRITISH.

The fishes of New Zealand may now be grouped into families and compared with those of the British islands. A comparative list of the families of the two regions is given in which those of New Zealand are numbered and those not represented in the colonial waters but occurring in the British waters are intercalated without numbers. In one column are given the numbers of species and genera of Britain and in another those of New Zealand. The list will also serve as a table of contents to the following catalogue:

				British.				New Zealand.								British.				New Zealand.																							
Class, order, suborder, and family.				Species.		Genera.		Species.		Genera.		Class, order, suborder, and family.				Species.		Genera.		Species.		Genera.																					
CLASS OF SELACHIANS—continued.																																											
<i>Order Holocephali.</i>																																											
20. <i>Chimæridæ</i>		1	1		2		1						CLASS OF TELEOSTOMES OR FISHES—continued.																														
CLASS OF TELEOSTOMES OR FISHES.																																											
<i>Order Chondrostei.</i>																																											
Acipenseridæ		1	1		0								<i>Order Teleocephali—Continued.</i>																														
<i>Order Malacopterygii.</i>																																											
21. <i>Haplochitonidæ</i>		0			1		1						45. <i>Carangidæ</i>		3	3	9		7																								
22. <i>Galaxiidæ</i>		0			6		2						46. <i>Bramidæ</i>		1	1	1		1																								
23. <i>Gonorhynchidæ</i>		0			1		1						47. <i>Diretmidæ</i>		0	0	1		1																								
24. <i>Chaneidæ</i>		0			1		1						48. <i>Stromateidæ</i>		4	3	1		1																								
25. <i>Clupeidæ</i>		5	3		2		1						49. <i>Nomeidæ</i>		0	2	1		1																								
26. <i>Stolephoridæ</i> (<i>Engraulididæ</i>)		1	1		1		1						50. <i>Scombridae</i>		7	5	3		3																								
27. <i>Argentinidæ</i>		2	2		2		2						51. <i>Gempylidæ</i>		0	0	1		1																								
Thymallidæ		1	1										52. <i>Lepidopodidæ</i>		1	1	2		2																								
Salmonidæ		7	3		0		0						Trichiuridæ		1	1	0		0																								
<i>Order Iniomii.</i>																																											
28. <i>Synodontidæ</i>		0	0		1		1						53. <i>Histiophoridae</i>		0	0	1		1																								
29. <i>Aulopidæ</i>		0	0		1		1						54. <i>Xiphidiidæ</i>		1	1	1		1																								
30. <i>Gonostomidæ</i>		0	0		1		1						55. <i>Lamprididæ</i> (<i>Coryphaenidæ</i> gen. Day)		1	1	1		1																								
31. <i>Maurolocidæ</i>		1	1		2		2						56. <i>Zeidae</i> (<i>Cyttidae</i> D.)		1	1	5		5																								
Paralepididæ (<i>Scopelidæ</i>)		1	1										57. <i>Caproidæ</i> (<i>Carangidæ</i> gen. Day)		1	1																											
32. <i>Myctophidæ</i> (<i>Scopelidæ</i>)		0	0		4		1						Luvaridæ (<i>Coryphaenidæ</i> gen. Day)		1	1																											
33. <i>Sternoptychidæ</i>		1	1		1		1						58. <i>Teuthididæ</i>		0	0	1		1																								
<i>Order Plectospondyli.</i>																																											
Cyprinidæ		14	5		0		0						59. <i>Serranidæ</i>		4	4	4		3																								
Cobitidæ		2	2		0		0						60. <i>Lutjanidæ</i>		2	2	0		0																								
<i>Order Apodes.</i>																																											
(Suborder Enchelycephali.)																																											
34. <i>Leptocephalidæ</i> (<i>Congridæ</i>)		1	1		4		2						72. <i>Congiopodidæ</i>		0	0	1		1																								
35. <i>Anguillidæ</i>		1	1		3		1						73. <i>Percophidæ</i>		0	0	2		2																								
36. <i>Ophichthyidæ</i>		0	0		1		1						74. <i>Nototheniidæ</i>		0	0	5		1																								
(Suborder Colocephali.)																																											
37. <i>Muraenidæ</i>		1	1		1		1						75. <i>Bovichtyidæ</i>		0	0	1		1																								
<i>Order Heteromi.</i>																																											
38. <i>Notacanthidæ</i>		1	1		1		1						76. <i>Uranoscopidæ</i>		0	0	5		2																								
<i>Order Teleocephali.</i>																																											
(Suborder Haplomi.)																																											
Esocidæ (D.)		1	1										77. <i>Leptoscopidæ</i>		0	0	4		2																								
(Suborder Syngnathini.)																																											
39. <i>Exocetidæ</i> (<i>Scombresocidæ</i> D.)		3	3		3		2						78. <i>Hemerocteidæ</i>		0	0	1		1																								
Belonidæ		1	1		0		0						79. <i>Gobiidæ</i> (D.)		9	3	3		2																								
(Suborder Percesoces.)																																											
40. <i>Sphyrænidæ</i> (D.)		1	1		1		1						Callionymidæ		2	1																											
41. <i>Atherinidæ</i> (D.)		2	1		1		1						Cepolidae		1	1																											
42. <i>Mugilidæ</i> (D.)		2	1		2		2						Bleenniidae		4	2																											
(Suborder Acanthopterygii.)																																											
43. <i>Berycidæ</i>		0	0		1		1						81. <i>Acanthoclinidæ</i>		0	0	1		1																								
44. <i>Trachichthyidæ</i>		0	0		3		1						82. <i>Gadopsidæ</i>		0	0	1		1																								
(Suborder Craniomi.)																																											
45. <i>Triglidæ</i>		7	2		3		2						83. <i>Lycodidæ</i>		1	1	1		1																								
(Suborder Tæniosomi.)																																											
46. <i>Trachypteridæ</i>		1	1		2		1						84. <i>Brotulidae</i>		0	0	1		1																								
47. <i>Ophidiidæ</i> (D.)		1	1		1		1						85. <i>Fierasferidæ</i>		1	1	1		1																								
48. <i>Ammodytidæ</i>		3	2										86. <i>Regalecidæ</i>		1	1	2		1																								

Class, order, suborder, and family.				New Zealand.				Class, order, suborder, and family.				New Zealand.			
	Species.	Genera.			Species.	Genera.			Species.	Genera.				Species.	Genera.
CLASS OF TELEOSTOMES OR FISHES—continued.															
<i>Order Teleocephali</i> —Continued.															
(Suborder Xenopterygii.)															
89. Gobiesocidae					4	3									
(Suborder Discocephali.)															
90. Echeneiidæ (Scombridæ g. D.)	1	1	1	1											
(Suborder Anacanthini.)															
91. Ranicipitidæ	1	1													
91. Gadidæ	16	11	5	4											
92. Merlucciidæ	1	1	1	1											
93. Bregmacerotidæ	0	0	1	1											
94. Macruridæ	1	1	4	4											
(Suborder Heterosomata.)															
95. Pleuronectidae	14	11	11	6											
Soleidae	4	3	0	0											
<i>Order Hemibranchii.</i>															
Gasterosteidae	3	3	0	0											
Fistulariidae	0	0	†	†											
96. Macrorhamphosidæ	1	1	1	1											
<i>Order Lophobranchii.</i>															
97. Syngnathidæ					5		4								
98. Hippocampidæ					1		1								
<i>Order Plectognathi.</i>															
(Suborder Sclerodermi.)															
99. Balistidæ *							2	1	1	1					
(Suborder Ostracodermi.)															
100. Ostraciontidae							0	0	2	2					
(Suborder Gymnodontes.)															
101. Tetraodontidæ †							1	1	1	1					
102. Diodontidæ †							0	0	1	1					
103. Molidae †							2	2	1	1					
<i>Order Pediculati.</i>															
104. Antennariidæ							0	0	1	1					
105. Ceratiidæ							0	0	1	1					
Lophiidae							1	1	0	0					

* Sclerodermi D.

† Gymnodontes D.

‡ Recorded in F. N. Z. (p. 39), but omitted in list.

VI.

DEDUCTIONS FROM COMPARATIVE TABLE.

An analysis of the results recorded and tabulated in this article shows that the following twenty-five families are represented in the New Zealand seas and not in the British, viz:

Heptatremidæ.	Odacidae.
Rhinobatidæ.	Congiopodidæ.
Gonorhynchidæ.	Uranoscopidæ.
Chaneidæ.	Leptoscopidæ.
Myctophidæ.	Bovichthyidæ.
Ophichthyidæ.	Percophidæ.
Berycidæ.	Nototheniidæ.
Trachichthyidæ	Clinidæ.
Nomeidæ.	Acanthoclinidæ.
Haplodactylidæ.	Hemeroecetidæ.
Arripididæ.	Brotulidæ.
Lutjanidæ.	Bregmacerotidæ.
Kyphosidæ.	

Of these eleven are peculiar to the southern hemisphere, viz:

Gonorhynchidæ.	Bovichthyidæ.
Trachichthyidæ.	Percophidæ.
Arripididæ.	Nototheniidæ.
Odacidae.	Acanthoclinidæ.
Congiopodidæ.	Hemeroecetidæ.
Leptoscopidæ.	

Again, four are also represented in the Northern Pacific, but not in the Northern Atlantic, viz:

Heptatremidæ.	Haplodactylidæ.
Chaneidæ.	Bregmacerotidæ.

The remaining ten, although without representatives in the British seas, have quite a general distribution, viz:

Rhinobatidæ.	Lutjanidæ.
Myctophidæ.	Kyphosidæ.
Ophichthyidæ.	Uranoscopidæ.
Berycidæ.	Clinidæ.
Nomeidæ.	Brotulidæ.

A comparison of the fresh water representatives of the two faunas shows even a more striking contrast. Those characteristic of the Northern Hemisphere are, with the exception of the *Argentinidae*, entirely unrepresented in the Southern, while the Antipodal types are wanting in the Northern zones. The fresh water fishes of New Zealand belong to three families, viz:

Haplochitonidæ.	Argentinidæ.
Galaxiidæ.	(Retropinnina.)

Of course the Anguillids, which are marine fishes of general distribution, breeding only in the sea, and the species introduced from Britain, are not considered in this connection.

As to some remaining features and peculiarities, the list and tabulated summary will be self-explanatory; as to others, a comparison with the faunas of the corresponding isotherms of Australia and the Southern Hemisphere generally is necessary.

A few more remarks, however, seem to be called for.

The fishes enumerated by Prof. Hutton in his recent "List of the New Zealand Fishes," and therefore carried over into the following enumeration, belong to no less than six distinct geographical realms, viz:

1. Notarian realm, including most of the species.
2. Antarettalian realm, characterized especially by the Nototheniids.
3. Pelagalian realm, represented by the isuroid and some other sharks, large Scombrids, Gempylids, a Nomeid, several Carangids (*Naucrates*, *Seriola*, *Caranx*), the Lampridid, Scopelids, and various others.
4. Bassalian realm, to which belong the *Bathysaurus*, *Benthodesmus*, *Halargyreus*, *Bathygadus*, most Macrurids, *Ægæonichthys*, and several other less typical forms.
5. Tropicalian realm, from which have wandered the *Ophisurus*, *Muraena*, *Sphyraena*, and (if they have really been found in New Zealand) the *Tenthis*, *Dascyllus*, and *Ostracion*, besides others.
6. Ornithogæan realm, almost indistinguishable, so far as the fishes are concerned, from the Austrogaean and Amphigæan realms. This includes all the fresh-water fishes which mainly represent two families, Haplochitonids and Galaxiids, and whose principal genus, *Galaxias*, is exemplified by nearly related species in the colder waters of Australia and South America.

The consideration of these various elements and comparison of them with those of other regions point to the following conclusions:

The main marine fauna of New Zealand is derived from representatives of the general stock which has become developed in the great notarian realm. The number of species apparently peculiar to the province and therefore modified from other or earlier representatives indicates a long period of isolation in accordance with its distance from the nearest continents and the depth of the intervening ocean. The percentage of such peculiar species seems to entitle it to rank as a distinct region (or subregion) rather than as an integral portion of the notarian region composed of the isothermal portions of Australia and Tasmania, as has been generally done. A more extended study and actual comparison of the species of the two regions may, however, compel a reconsideration of this view.

The fresh-water fishes must have been derived from the same common source as those of the isothermal portions of Australia (of course including Tasmania) and South America. There may not have been a continuity of land at any one time between South American, Australia, and New Zealand, but, at some remote period in the past, it is at least possible that there was a region in which the Galaxiids and Haplochitonids were developed, and subsequently representatives of those families might have found their way into the regions where they now abound. But, it may be urged, such a derivation is only possible and there may have been other means for diffusion of the same types.

The alternative then lies between two possibilities:

1. According to some, the forms of fresh-water fishes common to the now widely isolated lands may have been transported afar and distributed in some unnatural manner. (*a*) The progenitors of the existing species may have been, for example, entombed in masses of ice, and such may have been carried into the ocean and wafted to distant regions, where they may have found congenial waters, been liberated from their long imprisonment, mated, and propagated their race. (*b*) They may have even survived a long sojourn in salt water into which they wandered. (*c*) They may have originated from congeneric species formerly existing in the ocean, but now extinct therein and restricted to fresh water.

2. According to others, community in type must be the expression of community of origin, and the presence of fishes of long-established fresh-water types must imply continuity or at least contiguity of the lands in the midst of which they occur at some one time or other.

Some physical geographers and thalassographers have found difficulty in admitting the existence of land where now deep oceans exist, and have consequently denied the probability of land connection between the southern lands. The objections do not appear to me to be insuperable. It is well known that the highest mountain chains are of comparatively recent geological age. It remains then to consider which is the more probable, (1) that the types now common to distant regions were distributed in some unnatural manner by means referred to, or (2) that they are the descendants of forms once wide ranging over lands now submerged.

The distribution of different types of fresh-water fishes is analogous to the geographical range of amphibians, mollusks, crustaceans, and other animals, and recent paleontological finds indicate that even the Thylacinids (or at least forms resembling them) were formerly natives of southern America. While it may be admitted that it is possible that *one* or *two* types may have been distributed in some such unnatural manner as has been suggested, it is highly improbable that *all* the forms common to the distant regions could have been so distributed.

The time at which immigration took place into the regions now occupied by the Galaxiids and Haplochitonids can not be ascertained in the present stage of ignorance of the paleontological history of those forms. We can only conjecture from a knowledge of the paleontological history of others.

The various classes of animals differ remarkably in persistence of type or rapidity of change.

On the one hand, echinoderms, mollusks, and articulates are very persistent in essential structural features. Of mollusks, for example, Unionids, Lymnaeids, Valvatids, Melaniids, and Viviparids were not only represented by undoubted members of the same families in Mesozoic times; but even *genera* had come into existence which are still extant and were manifest in species little divergent from some which live in streams which course lands in latitudes and longitudes where they once flourished.

On the other hand, mammals have undergone such changes that scarcely a single *family* which existed in Eocene times has survived to the present, or, in other words, few, if any,* existing families can be traced back to the Eocene into forms which are now recognized as members of the same family.

It thus appears that in the same land, in early Tertiary times, mammals entirely unlike those now living, and belonging to different families, walked the earth through which coursed streams in which flourished mollusks quite similar to those now living in succeeding courses, and the same mammals might have crushed under foot gastropods, also almost undistinguishable from some still existing.†

Fishes to a certain extent are intermediate between invertebrates and mammals in persistence of type, and consequently as indicators of geological periods. Few teleostomous families can be traced farther back than Cretaceous times, and very few, if any, genera.

In the present stage of science, then, we may be permitted to postulate (fishes being congeneric in New Zealand, Australia, and South America), that there existed some terrestrial passage way between the several regions at a time as late as the close of the Mesozoic period. The evidence

*After a careful survey of all the families of mammals, I can not recognize a single one which now flourishes which had undoubted representatives in the Eocene period, or at least of which unequivocal remains have been found.

†As is well known land shells like those of the present epoch lived as early as the Carboniferous.

of such a connection afforded by congeneric fishes is fortified by analogous representatives among insects, mollusks, and even amphibians. The separation of the several areas must, however, have occurred little later than the early Tertiary, inasmuch as the salt-water fishes of corresponding isotherms found along the coasts of the now widely separated lands are to such a large extent specifically different. In general, change seems to take place more rapidly among marine animals than fresh-water representatives of the same class.

VII.

NOMENCLATURE.

In deciding on the nomenclature adopted, obedience has always been paid to the precepts inculcated by the British and American associations for the advancement of science, and lately reënforced by the French association and the American Ornithologists' Union. The lawlessness that has long prevailed in this respect and the obtrusion of whims for laws have retarded the progress toward a settled nomenclature, although the extent to which rules of nomenclature have been violated has been hidden by a tacit consensus of those unwilling or unable to think for themselves.

A considerable proportion of the species are involved in more or less doubt as to their correct nomenclature, it being questionable whether some are identical with the forms with which they have been identified, and whether others are distinct from previously known ones. The exact generic relations of a few remain also to be determined. It is partly in order to have a basis from which to start anew for investigation that the present list is prepared.

All the species enumerated in Prof. Hutton's "List of the New Zealand Fishes" are repeated in the present catalogue; but nine of these species have very little claim to a place therein, and should probably be eliminated. They are the following:

19 (14) <i>Rhinobatus banksii</i> .	131 (40) <i>Chilodactylus carponemus</i> .
20 (15) <i>Trygonorhina fasciata</i> .	140 (50) <i>Cottapistus cottooides</i> .
55 (203) <i>Anguilla latirostris</i> .	174 (157) <i>Gadopsis marmoratus</i> .
99 (61) <i>Teuthis triostegus</i> .	224 (217) <i>Ostracion fornasini</i> .
112 (135) <i>Dasyillus aruanus</i> .	

All of these, excepting *Anguilla* and *Gadopsis*, were marked by Prof. Hutton himself as doubtful members of the New Zealand fauna. But the most doubtful of all appear to me to be the *Anguillid* and *Gadopsid*.

Anguilla latirostris has been attributed to New Zealand because a specimen, described by Dr. Gray as "*Anguilla dieffenbachii*," and supposed to have been taken in New Zealand, was identified with that species by Dr. Günther (Cat., iv, 33). Dr. Gray, under the name *Anguilla dieffenbachii*, adds: "Inhabits the River Thames, New Zealand.—Dr. Dieffenbach." Inasmuch as no other specimen has been recorded from that locality, we may be permitted, till another specimen has been found, to believe that there may have been some confusion or transposition of labels.*

Gadopsis marmoratus is recorded by Prof. Hutton as a New Zealand fish, and reference is made to Richardson ("Ann. Mag. Nat. Hist., ser. 4, vol. 1, p. 342"). No mention is made of the fish on the page referred to, and Sir John Richardson had died (June 5, 1865) before the volume cited was published (1868). Some confusion of notes must have happened to the distinguished New Zealand professor; but, whether Richardson has elsewhere recorded the species as an inhabitant of New Zealand or not, it is extremely improbable that such a conspicuous fresh-water fish should have been overlooked by other observers.

Of the two numbers prefixed to almost every species, the former, of course, indicates the sequence of the species adopted in the enumeration, and the latter (inclosed within parentheses) the number attached to it in Prof. Hutton's list.

* "Mr. Henry Travers brought three specimens of this eel from the Chatham Islands." Hutton T. N. Z. I., Vol. V, p. 271.

Class of LEPTOCARDIANS.

1. BRACHIOSTOMIDÆ.

1 (224) *Branchiostoma* (near *bassanum*?).*Branchiostoma lanceolatum* (*Pall.*) *Hutton*, Fishes N. Z., p. 88.

Class of MYZONTS.

Order HYPEROTRETI.

2. HEPTATREMIDÆ.

2 (223) *Heptatrema cirrata*.*Bdellostoma cirrhatum* (*Forst.*) *Hutton*, Fishes N. Z., p. 87.

Order HYPEROARTII.

3. PETROMYZONTIDÆ.

3 (222) *Geotria australis*.*Geotria australis* (*Gray*) *Hutton*, Trans. N. Z. Inst., vol. v, p. 272, pl. 12 f. [4] 1873.4 (221) *Geotria chilensis*.*Geotria chilensis* (*Gray*) *Hutton*, Fishes N. Z., p. 87; *Hutton*, Trans. N. Z. Inst., vol. v, p. 271; vol. viii, p. 216, 1875.

Class of SELACHIANS.*

Order OPISTHARTHRI.

4. HEXANCHIDÆ.

5 (8) *Notorhynchus indicus*.*Notidanus indicus* (*Cuv.*) *Hutton*, Fishes N. Z., p. 79; Trans. N. Z. Inst., vol. v, p. 271, 1873.

Order CYCLOSPONDYLI.

5. ECHINORHINIDÆ.

6 (13) *Echinorhinus spinosus*.*Echinorhinus spinosus* (*Gmel.*) *Parker*, Trans. N. Z. Inst., vol. xvi, p. 280, 1884.

6. DALATIIDÆ.

7 (12) *Dalatias licha*.*Scymus licha* (*Cuv.*) *Parker*, Trans. N. Z. Inst., vol. xv, p. 222.

7. SQUALIDÆ.

8 (11) *Squalus acanthias*.*Acanthias vulgaris* (*Risso*) *Hutton*, Fishes N. Z., p. 76.

8. OXYNOTIDÆ.

9 (10) *Oxynotus centrina*.*Centrina salviana* (*Risso*) *Hutton*, Trans. N. Z. Inst., vol. xxii, p. 276.

Order ASTEROSPONDYLI.

9. SCYLLIORHINIDÆ.

10 (9) *Cephaloscyllium laticeps*.*Scyllium laticeps* (*Duméril*) *Hutton*, Fishes N. Z., p. 79; *Hutton*, Trans. N. Z. Inst., vol. viii, p. 216.

10. ISURIDÆ.

11 (6) *Carcharodon carcharias*.*Carcharodon rondeletii* (*Müll.* and *Henle*) *Hutton*, Fishes N. Z., p. 78.

* The following type was subsequently eliminated: *Heterodontus Philippii Cestracion Philippii* (*Lac.*) *Hutton*, Fishes N. Z., p. 80.

12 (5) *Isurus cornubicus*.

Lamna glauca (*M. and H.*) *Hutton*, Fishes N. Z., p. 77.
Lamna cornubica (*Gmel.*) *Haast*, Trans. N. Z. Inst., vol. vii, p. 237.

11. CETORHINIDÆ.

13 (—) *Cetorhinus maximus*.

Selache maxima *Cheseman*, Trans. N. Z. I., vol. xxiii, p. 126.

12. ALOPIIDÆ.

14 (7) *Alopias vulpes*.

Alopecias vulpes (*Gmel.*) *Hutton*, Fishes N. Z., p. 78.

13. GALEIDÆ.

15 (2) *Galeus antarcticus*.

Mustelus antarcticus (*Günth.*) *Hutton*, Fishes N. Z., p. 76, fig. 123; *Parker*, Trans. N. Z. Inst., vol. xv, p. 219, pl. 30.

16 (4) *Galeorhinus australis*.

Galeus canis (*L.*) *Hutton*, Fishes N. Z., p. 81.

17 (1) *Carcharinus brachyurus*.

Carcharias brachyurus (*Günther*) *Hutton*, Fishes N. Z., p. 75.

14. SPHYRNIDÆ.

18 (3) *Sphryna zygæna*.

Zygæna malleus (*Risso*) *Hutton*, Fishes N. Z., p. 76; *Hutton*, Trans. N. Z., Inst., vol. v, p. 271.

Order HYPOTREMI.

Suborder SARCURA.

15. RHINOBATIDÆ.

19 (14) *Rhinobatus banksii*. (d. @ hab.)

Rhinobatis banksii (*Müll. and Henle*) *Hutton*, Fishes N. Z., p. 82.

20 (15) *Trygonorhina fasciata*. (d. @ hab.)

Trygonorhina fasciata (*Müll. and Henle*) *Hutton*, Fishes N. Z., p. 82.

16. RAIIDÆ.

21 (18) *Raia nasuta*.

Raia nasuta (*Solander*) *Hutton*, Fishes N. Z., p. 84; *Hutton*, Trans. N. Z. Inst., vol. viii, p. 216.

17. TORPEDINIDÆ.

22 (16) *Torpedo fairchildi*.

Torpedo fairchildi *Hutton*, Fishes N. Z., p. 83, fig. 134.

23 (17) *Torpedo fusca*.

Torpedo fusca *Parker*, Trans. N. Z. Inst., vol. xvi, p. 281, pl. 23.

Suborder MASTICURA.

18. DASYBATIDÆ.

24 (19) *Dasybatis brevicaudatus*.

Trygon thalassia (*Columna*) *Hutton*, Fishes N. Z., p. 85.

Trygon Kuhlii (*M. & H.*) *Hutton*, Fishes N. Z., p. 85.

Trygon brevicaudatus *Hutton*, Trans. N. Z. Inst., vol. viii, p. 216.

19. AETOBATIDÆ.

25 (20) *Aetobatus tenuicaudatus*.

Myliobatis aquila *Hutton*, Fishes N. Z., p. 86.

Myliobatis tenuicaudatus, *Hector*, Trans. N. Z. Inst., vol. ix, p. 286.

Order HOLOCEPHALI.

20. CHIMAERIDÆ.

26 (21) *Callorhynchus antarticus*.

Callorhynchus antarticus (*Lacep.*) *Hutton*, Fishes N. Z., p. 74.

27 (22) *Callorhynchus dasycaudatus*.

Callorhynchus dasycaudatus *Colenso*, Trans. N. Z. Inst., vol. xi, p. 299, pl. 1.

Class of TELEOSTOMES or true Fishes.

Order MALACOPTERYGII.

21. HAPLOCHITONIDÆ.

28 (196) Prototroctes oxyrhynchus.Prototroctes oxyrhynchus (*Günth.*) *Hutton*, Fishes N. Z., pp. 57 (*Hector*) 123, fig. 21; *Arthur*, Trans. N. Z. Inst., vol. xvii, p. 171.

22. GALAXIIDÆ.

29 (185) Galaxias alepidotus.Galaxis alepidotus (*Forst.*) *Hutton*, Fishes N. Z., p. 58.**30 (186) Galaxias fasciatus.**Galaxias fasciatus (*Gray*) *Hutton*, Fishes N. Z., pp. 59 (*Hector*), 128, fig. 94.**31 (187) Galaxias brevipinnis.**Galaxias brevipinnis (*Günth.*) *Hutton*, Fishes N. Z., p. 59.Galaxias grandis *Haast*, Trans. N. Z. Inst., vol. v, p. 278, vide *Hutton*, vol. vi, p. 107.**32 (188) Galaxias olidus.**Galaxias olidus (*Günth.*) *Hutton*, Trans. N. Z. Inst., vol. v, p. 270.**33 (189) Galaxias attenuatus.**Galaxias attenuatus (*Jenyns*) *Hutton*, Fishes N. Z., p. 60, fig. 96.**34 (190) Neochanna apoda.**Neochanna apoda (*Günth.*) *Hutton*, Fishes N. Z., pp. 61 (*Hector*), 130, fig. 97.

23. GONORHYNCHIDÆ.

35 (197) Gonorhynchus greyi.Gonorhynchus greyi (*Rich.*) *Hutton*, Fishes N. Z., pp. 62 (*Hector*), 119, fig. 98.

24. CHANEIDÆ.

36 (201) Chanos salmoneus.Chanos salmoneus (*Forst.*) *Hutton*, Fishes N. Z., p. 64, fig. 101.

25. CLUPEIDÆ.

37 (199) Clupea sagax.Clupea sagax (*Jenyns*) *Hutton*, Fishes N. Z., p. 93, fig. 100; *Arthur*, Trans. N. Z. Inst., vol. xv, p. 208.**38 (200) Clupea antipodum.**Clupea sprattus (*Linn.*) *Hutton*, Fishes N. Z., p. 133; *Arthur*, Trans. N. Z. Inst., vol. xv, p. 203; *Hutton*, Trans. N. Z. Inst., vol. xv, p. 270, pl. 12, f.—

26. STOLEPHORIDÆ.

39 (198) Stolephorus antipodum.Engraulis enerasicholus (*Linn.*) *Hutton*, Fishes N. Z., p. 62, fig. 99.Engraulis enerasicholus, var. *antipodum* (*Günth.*) *Hutton*, Trans. N. Z. Inst., vol. v, p. 270.

27. ARGENTINIDÆ.

40 (195) Argentina decagon.Argentina decagon *Clarke*, Trans. N. Z. Inst., vol. xi, p. 296, pl. 14, f.**41 (194) Retropinna richardsonii.**Retropinna richardsoni (*Gill*) *Hutton*, Fishes N. Z., pp. 58, 126, fig. 92.Retropinna osmeroides *Hector*, Trans. N. Z. Inst., vol. iii, p. 134, pl. 19, f. 1.

Order INIOMI.

28. AULOPIDÆ.

42 (180) Chlorophthalmus gracilis.Chlorophthalmus gracilis *Günth.*, Ann. & Mag. Nat. Hist. (5), vol. xxi, p. 182.

29. SYNODONTIDÆ.

43 (179) Bathysaurus ferox.Bathysaurus ferox *Günther*, Ann. & Mag. Nat. Hist. (5), vol. ii, p. 182.

30. GONOSTOMIDÆ.

44 (191) Phosichthys argenteus.Phosichthys argenteus *Hutton*, Fishes N. Z., p. 56.Phosichthys argenteus *Hutton*, Trans. N. Z. Inst., vol. v, p. 269, pl. 15, f.

31. MAUROLOCIDÆ.

45 (193) *Maurolicus australis*.*Maurolicus australis* *Hector*, Trans. N. Z. Inst., vol. VII, p. 250, pl. 11, f.*Gonostoma australis* *Hutton*, Trans. N. Z. Inst., vol. VIII, p. 215.*Maurolicus amethystino-punctatus* (*Cocco*) *Günther*, Ann. & Mag. Nat. Hist. (4), vol. XVII, p. 399; Trans. N. Z. Inst., vol. IX, p. 472.

32. MYCTOPHIDÆ.

46 (175) *Lampadena parvimanus*.*Scopelus parvimanus* (*Günth.*)* *Hutton*, Trans. N. Z. Inst., vol. V, p. 269, pl. 15, f. [6].47 (176) *Myctophum hectoris*.*Scopelus hectoris* *Günth.*, Ann. & Mag. Nat. Hist. (4), vol. XVII, p. 399, 1876; Trans. N. Z. Inst., vol. IX, p. 471.48 (177) *Myctophum boops*.**Scopelus boops* (*Rich.*) *Hutton*, Trans. N. Z. Inst., vol. V, p. 269.49 (178) *Stenobrachius coruscans*.**Scopelus coruscans* (*Rich.*) *Hutton*, Trans. N. Z. Inst., vol. V, p. 270.

33. STERNOPTYCHIDÆ.

50 (192) *Argyropelecus intermedius*.*Argyropelecus intermedius* *Clarke*, Trans. N. Z. Inst., vol. X, p. 244, pl. 6 (2 fig.).

Order APODES.

34. LEPTOCEPHALIDÆ.

51 (205) *Leptocephalus conger*.*Conger vulgaris* (*Cuv.*) *Hutton*, Fishes N. Z., p. 66, fig. 105.52 (206) *Congermuræna habentata*.*Congromuræna habentata* (*Rich.*) *Hutton*, Fishes N. Z., p. 66, fig. 106.

35. ANGUILLIDÆ.

53 (202) *Anguilla aucklandica*.*Anguilla aucklandica* (*Rich.*) *Hutton*, Fishes N. Z., pp. 64, (*Hector*) 131, fig. 102.54 (204) *Anguilla australis*.*Anguilla australis* (*Rich.*) *Hutton*, Fishes N. Z., p. 65, fig. 104.55 (203) *Anguilla latirostris*.*Anguilla latirostris* (*Risso*) *Hutton*, Fishes N. Z., p. 65; Trans. N. Z. Inst., vol. V, p. 271.

36. OPHICHTHYIDÆ.

56 (207) *Ophisurus serpens*.*Ophisurus serpens* (*L.*) *Hutton*, Fishes N. Z., p. 66.

37. MURÆNIDÆ.

57 (208) *Muraena krullii*.*Mauræna krullii* *Hector*, Trans. N. Z. Inst., vol. IX, p. 468, pl. 8, f. [3].

Order HETEROMI.

38. NOTACANTHIDÆ.

58 (209) *Notacanthus sexspinis*.*Notacanthus sexspinis* (*Rich.*) *Hutton*, Fishes N. Z., p. 39.

Order TELEOCEPHALI.

Suborder SYNENTOGNATHI.

39. EXOCETIDÆ.†

59 (183) *Exocetus micropterus*,*Exocetus micropterus* (*C. and V.*) *Hutton*, Fishes N. Z., p. 54.60 (184) *Exocetus speculiger*.*Exocetus speculiger* (*C. and V.*) *Hutton*, Fishes N. Z., p. 55.* Sea between Australia and New Zealand (Dr. Hooker).—*Hutton*.† *Arrhamphus sclerolepis* (*Günth.*) *Hutton*, Fishes N. Z., p. 54, has been wrongly credited to New Zealand and is a Queensland fish (*Hutton*, Trans. N. Z. Inst., vol. V, p. 269).

61 (182) **Hemirhamphus intermedius.**

Hemirhamphus intermedius (*C. and V.*) *Hutton*, Fishes N. Z., pp. 53, (*Hector*) 118, fig. 86.

62 (181) **Scombrasox forsteri.**

Scombrasox forsteri (*C. and V.*) *Hutton*, Fishes N. Z., p. 53.

Suborder PERCESOCES.

40. SPHYRÆNIDÆ.

63 (121) **Sphyraena obtusata.**

Sphyraena obtusata (*C. and V.*) *Kirk*, Trans. N. Z. Inst., vol. XII, p. 310, f.

41. ATHERINIDÆ.

64 (122) **Atherina pinguis.**

Atherina pinguis (*Lacep.*) *Kirk*, Trans. N. Z. Inst., vol. XII, p. 309, f.

42. MUGILIDÆ.

65 (123) **Mugil cephalotus.**

Mugil perusii (*C. and V.?*) *Hutton*, Fishes N. Z., p. 36; Trans. N. Z. Inst., vol. v, p. 264, pl. 9.

66 (124) **Agonostomus forsteri.**

Agonostoma forsteri (*Bl.*) *Hutton*, Fishes N. Z., pp. 37, 114, (*Hector*) fig. 58.

Suborder ACANTHOPTERYGII.

43. BERYCIDÆ.

67 (54) **Beryx affinis.**

Beryx affinis *Günth.*, Ann. Mag. Nat. Hist. (5), vol. XX, p. 238; *Hector*, Trans. N. Z. Inst., vol. IX, p. 466, pl. 9, f.

44. TRACHICHTHYIDÆ.

68 (51) **Trachichthys elongatus.**

Trachichthys elongatus (*Günth.*) *Hutton*, Fishes N. Z., p. 12.

69 (52) **Trachichthys intermedius.**

Trachichthys intermedius *Hector*, Trans. N. Z. Inst., vol. VII, p. 245, pl. 11, f.

70 (53) **Trachichthys traillii.**

Trachichthys traillii *Hutton*, Trans. N. Z. Inst., vol. VIII, p. 212; *Arthur*, Trans. N. Z. Inst., vol. XVII, p. 162.

45. CARANGIDÆ.

71 (63) **Caranx georgianus.**

Caranx georgianus (*C. and V.*) *Hutton*, Fishes N. Z., pp. 16, (*Hector*) 110, fig. 24.

72 (64) **Caranx koheru.**

Caranx koheru *Hector*, Trans. N. Z. Inst., vol. VII, p. 247, pl. 11, f.

73 (62) **Trachurus trachurus.**

Trachurus trachurus (*L.*) *Hutton*, Fishes N. Z., pp. 16; (*Hector*) 110, fig. 23.

74 (65) **Seriola lalandii.**

Seriola lalandii (*C. and V.*) *Hutton*, Fishes N. Z., p. 17; (*Hector*) 111, fig. 25.

75 (71) **Naucrates ductor.**

Naucrates ductor (*L.*) *Hutton*, Fishes N. Z., p. 18.

76 (67) **Seriolella bilineata.**

Neptomenus bilineatus *Hutton*, Trans. N. Z. Inst., vol. V, p. 261, pl. 8, f.

77 (68) **Seriolella porosa.**

Seriolella porosa (*Guichen.*) *Hutton*, Trans. N. Z. Inst., vol. VIII, p. 211.

78 (66) **Seriolella brama.**

Neptonemus brama (*Günth.*) *Hutton*, Fishes N. Z., pp. 21; (*Hector*) 112, fig. 31.

79 (70) **Evistius huttoni.**

Platystethus huttoni *Günth.*, Ann. and Mag. N. Hist. (4), vol. XVII, p. 395; Trans. N. Z. Inst., vol. IX, p. 470; Report on Pelagic Fishes of *Challenger*, p. 13, pl. 2.

46. BRAMIDÆ.

80 (77) **Brama squamosa.**

Toxotes squamosus *Hutton*, Trans. N. Z. Inst., vol. VIII, p. 210.

Brama squamosa (*Bl.*) *Hector*, Trans. N. Z. Inst., vol. IX, p. 465, pl. 9, f.

47. DIRETMIDÆ.

81 (79) **Diretmus aureus.**

Discus aureus *Campbell*, Trans. N. Z. Inst., vol. XI, p. 297, pl.

48. STROMATEIDÆ.

82 (69) Neptotichthys violaceus.

Ditrema violaceum *Hutton*, Trans. N. Z. Inst., vol. v, p. 261, pl. 8, f.
Neptotichthys violaceus, Trans. N. Z. Inst., vol. xxii, p. 278.

49. NOMEIDÆ.

83 (80) Gasteroschisma melampus.

Gasteroschisma melampus (*Rich.*) *Hutton*, Fishes N. Z., p. 20; *Hutton*, Trans. N. Z. Inst., vol. vi, p. 104, pl. 18, f.

50. SCOMBRIDÆ.

84 (81) Scomber australasicus.

Scomber australasicus (*C. and V.*) *Hutton*, Fishes N. Z., pp. 21, (*Hector*) 112, fig. 132.

85 (83) Sarda chilensis.

Pelamys chilensis (*C. and V.*) *Hutton*, Fishes N. Z., p. 22.

86 (82) Lepidothynnus huttoni.

Lepidothynnus huttoni *Günth.*, Report on Pelagic Fishes of *Challenger*, p. 15, pl. 6, fig. A'.

51. GEMPYLIDÆ.

87 (59) Thysites atun.

Thysites atun (*Euphrasen*) *Hutton*, Fishes N. Z., pp. 13, (*Hector*) 109, fig. 20.

88 (60) Promethichthys prometheus.

Thysites prometheus (*W. and B.*) vel *T. prometheoides* (*Bleeker*) *Hector*, Trans. N. Z. Inst., vol. xvi, p. 322.

52. LEPIDOPIDÆ.

89 (57) Lepidopus caudatus.

Lepidopus caudatus (*Euphrasen*) *Hutton*, Fishes N. Z., pp. 13, (*Hector*) 109, fig. 19; *Robson*, Trans. N. Z. Inst., vol. viii, p. 218.

90 (58) Benthodesmus elongatus.

Lepidopus elongatus *Clarke*, Trans. N. Z. Inst., vol. xi, p. 294, pl. 14, (2 f.).

53. HISTIOPHORIDÆ.

91 (56) Histiophorus herschelii.

Histiophorus herschelii (*Gray*) *Hutton*, Cat. Fishes N. Z., p. 14; *Hutton*, Trans. N. Z. Inst., vol. ii, p. 13, pl. f.; vol. viii, p. 216.

54. XIPHIIDÆ.

92 (55) Xiphias gladius.

Ziphius gladius (*Linn*) *Hector*, Trans. N. Z. Inst., vol. vii, p. 246; vol. viii, p. 219.
Xiphias gladius *Hutton*, Trans. N. Z. Inst., vol. viii, p. 211.

55. LAMPRIDIDÆ.

93 (78) Lampris guttatus.

Lampris luna (*Risso*) *Hector*, Trans. N. Z. Inst., vol. xvi, p. 322.

56. ZEIDÆ.

94 (72) Zeus faber.

Zeus faber (*L.*) *Hutton*, Fishes N. Z., pp. 18, (*Hector*), 111, fig. 27.

95 (74) Cyttus australis.

Cyttus australis (*Rich.*) *Hutton*, Fishes N. Z., pp. 19, (*Hector*) 112, fig. 28.

96 (73) Cyttus novæ-zelandiæ.

Zeus novæ-zelandiæ *Arthur*, Trans. N. Z. Inst., vol. xvii, p. 163, pl. 14, f. 3.

97 (75) Rhombocyttus traversi.

Cyttus traversi *Hutton*, Fishes N. Z., p. 19; Trans. N. Z. Inst., vol. v, p. 261, pl. 9, f.

57. CAPROIDÆ.

98 (76) Capromimus abbreviatus.

Platystethus abbreviatus *Hector*, Trans. N. Z. Inst., vol. vii, p. 247, pl. 11, f.
Capros abbreviatus *Hector*, Trans. N. Z. Inst., vol. ix, p. 465.
Cyttus abbreviatus *Hutton*, Trans. N. Z. Inst., vol. xxii, p. 279.

58. TEUTHUDIDÆ.

99 (61) Teuthis triostegus.

Acanthurus triostegus (*L.*) *Hutton*, Cat. Fishes N. Z., p. 15.

59. SERRANIDÆ.

100 (23) *Pseudanthias lepidopterus*.

Scorpius hectori *Hutton*, Fishes N. Z., pp. 4, (*Hector*) 106, fig. 4.

Anthias lepidoptera *Hutton*, Trans. N. Z. Inst., vol. ix, p. 353.

101 (24) *Pseudanthias longimanus*.

Scorpius hectori *Hutton*, Trans. N. Z. Inst., vol. v, p. 259, pl. 7, f.

Scorpius fairchildi *Hector*, Trans. N. Z. Inst., vol. vii, p. 241.

102 (25) *Gilbertia huntii*.

Plectropoma huntii *Hector*, Trans. N. Z. Inst., vol. vii, p. 241, pl. 10, f.

103 (26) *Polypriion prognathus*.

Oligorus gigas (*Owen*) *Hutton*, Fishes N. Z., pp. 1, (*Hector*) 102, fig. 1.

Oligorus gadoides (*Sol.*) *Hutton*, Trans. N. Z. Inst., vol. v, p. 259.

Polyprion prognathus (*Forster*) *Günther*, Ann. and Mag. Nat. Hist., (5) vol. xx, p. 236.

60. LUTJANIDÆ (?).

104 (28) *Plagiogeneion rubiginosus*.

Therapon ♀ *rubiginosus* *Hutton*, Trans. N. Z. Inst., vol. viii, p. 209.

61. ARRIPIDIDÆ.

105 (29) *Emmelichthys nitidus*.

Erytrichthys nitidus (*Richardson*) *Hutton*, Fishes N. Z., p. 3.

106 (30) *Arripis trutta*.

Arripis *salar* (*Rich.*) *Hutton*, Fishes N. Z., pp. 2, (*Hector*) 105, fig. 2.

62. PENTACEROTIDÆ.

107 (27) *Pseudopentaceros richardsonii*.

Pentaceros richardsonii (*Smith*) *Hutton*, Trans. N. Z. Inst., vol. xxii, p. 277.

63. KYPHOSIDÆ or PIMELEPTERIDÆ.

108 (31) *Atypichthys strigatus*.

Atypus strigatus (*Günth.*) *Kirk*, Trans. N. Z. Inst., vol. xii, p. 308.

109 (33) *Incisidens simplex*.

Girella percoidea *Hector*, Trans. N. Z. Inst., vol. vii, p. 243, pl. 10, f.

Girella simplex (*Rich.*) *Hector*, Trans. N. Z. Inst., vol. ix, p. 468, pl. 8, f.

Pimelepterus drewii *Hector*, Trans. N. Z. Inst., vol. xix, p. 590.

Ctenolabrus ♀ *knoxii* *Hutton*, Trans. N. Z. Inst., vol. v, p. 265, 308, pl. 10, f.

64. SPARIDÆ.

110 (35) *Sparosomus auratus*.

Pagrus unicolor (*Quoy and Gaim.*) *Hutton*, Fishes N. Z., pp. 6, (*Hector*) 106, fig. 7; Trans. N. Z. Inst., vol. ix, p. 353.

65. MULLIDÆ.*

111 (32) *Upeneichthys vlamingii*.

Upeneoides vlamingii *Hutton*, Fishes N. Z., p. 5.

Upeneichthys vlamingii *Hutton*, Proc. N. Z. Inst., vol. ix, p. 465, pl. 9, f.

66. POMACENTRIDÆ.

112 (135) *Dascyllus aruanus*.

Dascyllus aruanus (*L.*) *Hutton*, Fishes N. Z., p. 42.

67. LABRIDÆ.

113 (136) *Lepidotaplois oxycephalus*.

Cossyphus unimaculatus (*Günth.*) *Hector*, Trans. N. Z. Inst., vol. xvi, p. 323.

114 (—) *Duymæria flagellifera*?

Duymæria flagellifera (*T. and S.*) *Hector*, Trans. N. Z. I., vol. xxii, p. 527, 1890.

115 (137) *Pseudolabrus fucicola*.

Labrichthys bothryocosmus (*Rich.*) *Hutton*, Fishes N. Z., pl. 7 (fig. only).

Labrichthys fucicola (*Rich.*) *Hutton*, Trans. N. Z. Inst., vol. v, p. 265.

116 (—) *Pseudolabrus roseipunctatus*.

Labrichthys roseipunctatus *Hutton*, Trans. N. Z. I., vol. xii, p. 455.

117 (138) *Pseudolabrus bothryocosmus*.

Labrichthys bothryocosmus (*Rich.*) *Hutton*, Fishes N. Z., p. 43 (not fig.); *Hutton*, Trans. N. Z. Inst., vol. v, p. 265, pl. 10, f.

**Upeneichthys porosus* (*C. and V.*) *Hutton*, Fishes N. Z., p. 5, has been since eliminated by Prof. Hutton.

118 (139) *Pseudolabrus miles*.

Labrichthys psittacula (*Rich.*) *Hutton*, Fishes N. Z., p. 43; *Trans. N. Z. Inst.*, vol. IV, p. 265, pl. 10, f.
Labrichthys coccinea (*Forst.*) *Hutton*, *Trans. N. Z. Inst.*, vol. IX, p. 354.

119 (140) *Pseudolabrus celidotus*.

Labrichthys celidotus (*Forst.*) *Hutton*, Fishes N. Z., p. 42; *Günther*, Ann. and Mag. Nat. Hist., (4) vol. XVII, p. 398.

120 (141) *Pseudolabrus cinctus*.

Labrichthys cincta *Hutton*, *Trans. N. Z. Inst.*, vol. IX, p. 354.

121 (142) *Pseudolabrus laticlavius*.

Labrichthys laticlavius (*Rich.*) *Hector*, *Trans. N. Z. Inst.*, vol. XVI, p. 323.

122 (143) *Cymolutes sandeyeri*.

Cymolutes sandeyeri *Hector*, *Trans. N. Z. Inst.*, vol. XVI, p. 323.

68. ODACIDÆ.

123 (144) *Odax vittatus*.

Odax vittatus (*Sol.*) *Hutton*, Fishes N. Z., p. 43; *Hutton*, *Trans. N. Z. Inst.*, vol. V, p. 266; pl., vol. VIII, p. 214; vol. XII, p. 310; *Arthur*, vol. XVII, p. 169, pl. 14, f. 7.

124 (145) *Coridodax pullus*.

Coridodax pullus (*Forst.*) *Hutton*, Fishes N. Z., pp. 44, (*Hector*) 114, fig. 71; *Knox*, *Trans. N. Z. Inst.*, vol. III, p. 130, pl. 18, f. 2.

69. HAPLODACTYLIDÆ.

125 (34) *Haplodactylus meandratus*.

Chironemus georgianus *Hutton*, Fishes N. Z., p. 7.

Haplodactylus meandratus (*Rich.*) *Hector*, *Trans. N. Z. Inst.*, vol. VII, p. 241, pl. 10, f.; *Hutton*, *Trans. N. Z. Inst.*, vol. VIII, p. 211.

Haplodactylus donaldi *Haast*, *Trans. N. Z. Inst.*, vol. V, p. 272, pl. 16, f.

126 (36) *Chironemus furgussoni*.

Haplodactylus fergussoni *Hector*, *Trans. N. Z. Inst.*, vol. VII, p. 243.

Haplodactylus furgussoni *Hector*, *Trans. N. Z. Inst.*, vol. IX, p. 467, pl. 8, f.

127 (—) *Goniistius zonatus*.

Chilodactylus zonatus (*Cuv. and Val.*) *Hector*, *Trans. N. Z. I. Inst.*, vol. XXII, p. 527, 1890.

128 (37) *Chilodactylus macropterus*.

Chilodactylus macropterus (*Forst.*) *Hutton*, Fishes N. Z., pp. 8, (*Hector*) 107, fig. 10.

129 (38) *Chilodactylus spectabilis*.

Chilodactylus spectabilis *Hutton*, Fishes N. Z., p. 8; *Trans. N. Z. Inst.*, vol. V, p. 259, pl. 7, f.

130 (39) *Chilodactylus douglasi*.

Chilodactylus douglasi *Hector*, *Trans. N. Z. Inst.*, vol. VII, p. 244, pl. 10, f.

131 (40) *Chilodactylus carponeurus*.

Chilodactylus carponeurus (*Günth.*) *Hutton*, Fishes N. Z., p. 7.

132 (41) *Mendosoma lineata*.

Mendosoma lineata *Hutton*, *Trans. N. Z. Inst.*, vol. V, p. 260, pl. 7, f. (excl. syn. part.).

Mendosoma lineatum (*Gay*) *Hutton*, *Trans. N. Z. Inst.*, vol. IX, p. 353.

133 (42) *Latris lineata*.

Sciæna lineata *Forster*.

Latris hecateia (*Rich.*) *Hutton*, Fishes N. Z., p. 8, (*Hector*) 107, fig. 12.

134 (43) *Latris ciliaris*.

Latris ciliaris (*Forst.*) *Hutton*, Fishes N. Z., p. 9, (*Hector*) 108, fig. 13.

135 (44) *Latris ærosa*.

Latris ærosa *Hutton*, *Trans. N. Z. Inst.*, vol. IX, p. 353.

70. SCORPAENIDÆ.

136 (45) *Sebastapistes percoides*.

Sebastes percoides (*Solander*) *Hutton*, Fishes N. Z., p. 9, (*Hector*) 108; *Hutton*, *Trans. N. Z. Inst.*, vol. V, p. 261, pl. 8, f.; *Hutton*, *Trans. N. Z. Inst.*, vol. IX, p. 353.

137 (47) *Sebastapistes barathri*.

Scorpaena barathri *Hector*, *Trans. N. Z. Inst.*, vol. VII, p. 245, pl. 9, f.

138 (46) *Scorpaena cottooides*.

Scorpaena cruenta (*Solander*) *Hutton*, Fishes N. Z., p. 9; *Hutton*, *Trans. N. Z. Inst.*, vol. V, p. 261, pl. 8, f.

139 (48) *Scorpaena byssoenisis*.

Scorpaena byssoenisis (*Rich.*) *Hector*, *Trans. N. Z. Inst.*, vol. XVI, p. 323.

140 (50) *Cottapistus cottooides*.

Prosopodasys cottooides (*L.*) *Hutton*, Fishes N. Z., p. 11.

71. COTTIDÆ.*

141 (100) *Neophryinchthys latus*.*Psychrolutes latus* *Hutton*, Trans. N. Z. Inst., vol. VIII, p. 214.*Neophryinchthys latus* *Günth.*, Ann. and Mag. Nat. Hist. (4), v. XVII, p. 395; *Arthur*, Trans. N. Z. Inst., vol. XVII, p. 166, pl. 14, f. 5, 5a; *Gill*, Proc. U. S. Nat. Mus., vol. XI, p. 327, pl. 41.

72. CONGIOPODIDÆ.

142 (49) *Congiopodus leucopœcillus*.*Agriopus leucopœcillus* (*Rich.*) *Hutton*, Fishes N. Z., p. 11; *Hutton*, Trans. N. Z. Inst., vol. VIII, p. 211.

73. PERCOPHIDÆ.

143 (90) *Parapercis colias*.*Percis colias* (*Forst.*) *Hutton*, Fishes N. Z., p. 25, (*Hector*) 113, fig. 38.144 (91) *Parapercis gilliesii*.*Percis gilliesii* *Hutton*, Ann. and Mag. Nat. Hist. (5), vol. III, p. 53.145 (93) *Cheimarrichthys forsteri*.*Cheimarrichthys forsteri* *Haast*, Trans. N. Z. Inst., vol. VI, p. 103, pl. 18, f. [4].

74. NOTOTHENIIDÆ.

146 (94) *Notothenia maoriensis*.*Notothenia coriiceps* (*Rich.?*) *Hutton*, Fishes N. Z., p. 26.*Notothenia maoriensis* *Haast*, Trans. N. Z. Inst., vol. V, p. 276, pl. 16, f.; vol. VIII, p. 212.147 (95) *Notothenia angustata*.*Notothenia angustata* *Hutton*, Trans. N. Z. Inst., vol. VIII, p. 213.148 (96) *Notothenia cornucola*.*Notothenia cornucola* (*Rich.*) *Hutton*, Fishes N. Z., p. 26; *Hutton*, Trans. N. Z. Inst., vol. V, p. 262.149 (97) *Notothenia arguta*.*Notothenia arguta* *Hutton*, Trans. N. Z. Inst., vol. XI, p. 339.150 (98) *Notothenia microlepidota*.*Notothenia microlepidota* *Hutton*, Trans. N. Z. Inst., vol. VIII, p. 213.151 (99) *Notothenia parva*.*Notothenia parva* *Hutton*, Trans. N. Z. Inst., vol. XI, p. 339.

75. BOVICHTHYIDÆ.

152 (92) *Bovichthys variegatus*.*Bovichthys variegatus* (*Rich.?*) *Hutton*, Fishes N. Z., p. 24; *Hutton*, Trans. N. Z. Inst., vol. V, p. 262.

76. URANOSCOPIDÆ.

153 (85) *Genyagnus maculatus*.*Uranoscopus maculatus* (*Forster*) *Rich.**Kathetostoma monopterygium* (*Bloch*) *Hutton*, Fishes N. Z., p. 23; Trans. N. Z. Inst., vol. V, p. 104.*Synnema monopterygium* *Haast*, Trans. N. Z. Inst., vol. V, p. 274.*Anema monopterygium* *Hutton*, Trans. N. Z. Inst., vol. XXII, p. 279; *Günther*, Ann. and Mag. Nat. Hist. (4), vol. XVII, p. 394.*Kathetostoma giganteum* *Haast*, Trans. N. Z. Inst., vol. V, p. 274, pl. 16, f.154 (86) *Kathetostoma lævis*.*Kathetostoma læve* (*Bloch*) *Hutton*, Fishes N. Z., p. 23.155 (87) *Kathetostoma fluviatilis*.*Kathetostoma fluviatilis* *Hutton*, Fishes N. Z., p. 24.

77. LEPTOSCOPIDÆ.

156 (88) *Leptoscopus macropygus*.*Leptoscopus huttonii* *Haast*, Trans. N. Z. Inst., vol. V, p. 275, pl. 16, f.*Leptoscopus tricolor* *Haast*, Trans. N. Z. Inst., vol. V, p. 276.*Leptoscopus macropygus* (*Rich.*) *Hutton*, Trans. N. Z. Inst., vol. VI, p. 106; *Günther*, Ann. and Mag. Nat. Hist. (4), vol. XVII, p. 394.157 (89) *Crapatalus novæ-zelandiæ*.*Crapatalus novæ-zelandiæ* *Günther*, Ann. and Mag. Nat. Hist. (3), vol. VII, p. 87; *Hutton*, Trans. N. Z. Inst., vol. VIII, p. 212.*Leptoscopus* (?) *angusticeps* *Hutton*, Trans. N. Z. Inst., vol. VI, p. 106, f.*Leptoscopus robsoni* *Hector*, Trans. N. Z. Inst., vol. VII, p. 248.*Leptoscopus canis* *Arthur*, Trans. N. Z. Inst., vol. XVII, p. 165, pl. 14, f. 4.

* The Triglidæ are doubtless genetically related to the mail-cheeked acanthopterygians, but deviate so much by the crowding out of place of the posterotemporals, and the dissolution of the posttemporals from the scapular arch and their intimate union with the cranium, that they are isolated in a special suborder, and consequently have to take a different place in the system (178-180).

78. HEMEROCETIDÆ.

158 (108) Hemerocetes acanthorhynchus.

Hemerocetes acanthorhynchus (*Forst.*) *Hutton*, Fishes N. Z., p. 37.

79. GOBIIDÆ. *

159 (106) Gobiomorphus gobioides.

Eleotris gobioides (*C. and V.*) *Hutton*, Fishes N. Z., p. 29; *Hutton*, Trans. N. Z. Inst., vol. v, p. 263, pl. 15, f.

160 (107) Eleotris radiata.

Eleotris radiata (*Quoy and Gaim.*) *Hutton*, Trans. N. Z. Inst., vol. v, p. 263, pl. 9, f.

161 (105) Gobius lentiginosus.

Gobius lentiginosus (*Rich.*) *Hutton*, Fishes N. Z., p. 29.

80. CLINIDÆ.

162 (109) Ericentrus rubrus.

Sticharium rubrum *Hutton*, Fishes N. Z., p. 33.

Clinus rubrus *Hutton*, Trans. N. Z. Inst., vol. v, p. 264, pl. 9, f.

163 (110) Cologrammus flavesiensis.

Sticharium flavesiensis *Hutton*, Fishes N. Z., p. 33.

Clinus flavesiensis *Hutton*, Trans. N. Z. Inst., vol. v, p. 264, pl. 15, f.

164 (111) Cristiceps australis.

Cristiceps australis (*C. and V.*) *Hutton*, Trans. N. Z. Inst., vol. v, p. 264.

165 (112) Tripterygion tripinne.

Tripterygium forsteri (*C. and V.*) *Hutton*, Fishes N. Z., p. 31.

Tripterygium forsteri *Hutton*, Trans. N. Z. Inst., vol. ix, p. 354.

166 (113) Tripterygion decemdigitatum.

Tripterygium decemdigitatum *Clarke*, Trans. N. Z. Inst., vol. xi, p. 292, pl. 15, f.

167 (114) Tripterygion medium.

Tripterygium medium (*Guinlh.*) *Hutton*, Fishes N. Z., p. 32.

168 (115) Tripterygion dorsale.

Tripterygium dorsalis *Clarke*, Trans. N. Z. Inst., vol. xi, p. 291, pl. 15, f.

169 (116) Tripterygion varium.

Tripterygium varium (*Forst.*) *Hutton*, Fishes N. Z., p. 33; Trans. N. Z. Inst., vol. xxii, p. 280.

Tripterygium nigripinne (*C. and V.*) *Hutton*, Fishes N. Z., p. 31; Trans. N. Z. Inst., vol. v, p. 263; vol. ix, p. 354.

170 (117) Tripterygion robustum.

Tripterygium robustum, *Clarke*, Trans. N. Z. Inst., vol. xi, p. 292, pl. 15, f.

Tripterygium jenningsi *Hutton*, Trans. N. Z. Inst., vol. xi, p. 339.

171 (118) Notoclinus fenestratus.

Tripterygium fenestratum (*Forst.*) *Hutton*, Fishes N. Z., p. 32.

Auchenopterus fenestratus (*Forst.*) *Hutton*, Trans. N. Z. Inst., vol. xxii, p. 281.

Tripterygium compressum *Hutton*, Trans. N. Z. Inst., vol. v, p. 263, pl. 15, f.; vol. viii, p. 214; *Arthur*, Trans. N. Z. Inst., vol. xvii, p. 168, pl. 14, f. 6.

Auchenopterus compressus *Hutton*, Trans. N. Z. Inst., vol. ix, p. 354.

81. ACANTHOCLINIDÆ.

172 (119) Acanthoclinus littoreus.

Acanthoclinus littoreus (*Forst.*) *Hutton*, Fishes N. Z., p. 34.

173 (120) Acanthoclinus taumaka.

Acanthoclinus taumaka *Clarke*, Trans. N. Z. Inst., vol. xi, p. 293, pl. 15, f.

82. GADOPSISIDÆ.

174 (157) Gadopsis marmoratus.

Gadopsis marmoratus (*Rich.*) *Hutton*, Trans. N. Z. Inst., vol. xxii, p. 282 (fide "Rich.; Ann. Mag. Nat. Hist., ser. 4, vol. i, p. 342."—Reference erroneous—See *Hector*, Trans. N. Z. Inst., vol. ix, p. 467).

83. LYCODIDÆ.

175 (146) Hypolycodes haastii.

Hypolycodes haastii *Hector*, Trans. N. Z. Inst., vol. xiii, p. 194.

84. BROTULIDÆ.

176 (155) Dinematicthys consobrinus.

Dinematicthys consobrinus *Hutton*, Trans. N. Z. Inst., vol. viii, p. 217; *Hector*, Trans. N. Z. Inst., vol. ix, p. 466, pl. 9, f.

*Gobius amiciensis (*C. and V.*) *Hutton*, Fishes N. Z. p. 29, eliminated afterwards by *Hutton*, Trans. N. Z. Inst., vol. v, p. 263, as an inhabitant of New Ireland. The generic relations of *Eleotris radiata* are unknown.

85. OPHIDIIDÆ.*

177 (156) *Genypterus blacodes*.*Genypterus blacodes* (*Forst.*) *Hutton*, Fishes N. Z., pp. 48, (*Hector*) 116, f. 77.

Suborder CRANIOMI.

86. TRIGLIDÆ.

178 (104) *Trigla kumu*.*Trigla kumu* (*Less. and Garn.*) *Hutton*, Fishes N. Z., pp. 28, (*Hector*) 113, fig. 42.179 (—) *Lepidotrigla vanessa*.*Trigla vanessa* (*Rich.*) *Hector*, Trans. N. Z. Inst., vol. xxii, p. 530, 1890.180 (103) *Lepidotrigla brachyptera*.*Lepidotrigla brachyptera* *Hutton*, Fishes N. Z., p. 27; *Hutton*, Trans. N. Z. Inst., vol. v, p. 263, pl. 15, f.

Suborder TÆNIOSOMI.

87. TRACHYPTERIDÆ.

181 (132) *Trachypterus altivelis*.*Trachypterus altivelis* (*Kner?*) *Hutton*, Trans. N. Z. Inst., vol. v, p. 264; vol. viii, p. 214.182 (133) *Trachypterus arawata*.*Trachypterus arawata* *Clarke*, Trans. N. Z. Inst., vol. xiii, p. 195, fig.

88. REGALECIDÆ.

183 (130) *Regalecus pacificus**Regalecus pacificus* *Haast*, Trans. N. Z. Inst., vol. x, p. 247, pl. 7; *Powell*, Trans. N. Z. Inst., vol. xi, p. 269.*Regalecus gladius* (*Walb.*) *Hutton*, Fishes N. Z., p. 35.184 (131) *Regalecus argenteus*.*Regalecus argenteus* *Parker*, Trans. N. Z. Inst., vol. xvi, p. 284, pl. 23, 24; vol. xx, p. 20.— (—) *Regalecus* ——.*Regalecus grilli* (*Lindroth*) *Forbes*, Trans. N. Z. Inst., vol. xxiv, p. 193.

Suborder XENOPTERYGII.

89. GOBIESOCIDÆ.

185 (126) *Diplocrepis puniceus*.*Diplocrepis puniceus* (*Rich.*) *Hutton*, Fishes N. Z., p. 40; *Hutton*, Trans. N. Z. Inst., vol. viii, p. 214.186 (127) *Trachelochismus pinnulatus*.*Trachelochismus pinnulatus* (*Forst.*) *Hutton*, Fishes N. Z., p. 40; *Hutton*, Trans. N. Z. Inst., vol. viii, p. 214.187 (128) *Trachelochismus guttulatus*.*Trachelochismus guttulatus* *Hutton*, Fishes N. Z., p. 41.188 (129) *Crepidogaster hectoris*.*Crepidogaster hectoris* *Günth.*, Ann. and Mag. Nat. Hist. (4), vol. xvii, p. 396; Trans. N. Z. Inst., vol. ix, p. 471.

Suborder DISCOCEPHALI.

90. ECHENEIDIDÆ.

189 (84) *Remora brachyptera*.*Echeneis brachyptera* (*Lowe*) *Hutton*, Trans. N. A. Inst., vol. viii, p. 217.

Suborder ANACANTHINI.

91. GADIDÆ.

190 (152) *Lotella rhacina*.*Lotella rhacinus* (*Forst.*) *Hutton*, Fishes N. Z., p. 46; *Hutton*, Trans. N. Z. Inst., vol. v, p. 266; vol. vi, (opp. p. 104), pl. 18, f.191 (150) *Pseudophycis bacchus*.*Pseudophycis bacchus* (*Forst.*) *Hutton*, Fishes N. Z., pp. 46, (*Hector*) 115, fig. 75.192 (151) *Pseudophycis breviusculus*.*Pseudophycis breviusculus* (*Rich.*) *Hutton*, Fishes N. Z., p. 47, fig. 76.

* The ophidioidean fishes are naturally related to the blennioidean, and have no special characters in common with the gadoidean and only a vague external resemblance.

193 (149) **Halargyreus johnsonii.**Halargyreus johnsonii (*Günth.*) *Hutton*, Fishes N. Z., p. 45.194 (153) **Onos novæ-zelandiæ.**Motella novæ-zelandiæ *Hector*, Trans. N. Z. Inst., vol. vi, p. 107, pl. 18, f.195 (147) **Bathygadus cottoides.**Bathygadus cottoides *Günth.*, Ann. and Mag. Nat. Hist. (5), vol. ii, p. 23; Report on Deep-sea Fishes of *Challenger*.

92. MERLUCIIDÆ.

196 (148) **Merluccius gayi.**Gadus australis *Hutton*, Fishes N. Z., pp. 45, (*Hector*) 115, fig. 72.Merluccius gayi ? *Hutton*, Trans. N. Z. Inst., vol. v, p. 265.

93. BREGMACEROTIDÆ.

197 (154) **Auchenoceros punctatus.**Calloptilum punctatum *Hutton*, Trans. N. Z. Inst., vol. v, p. 267, pl. 11, f.Bregmaceros punctatus *Günther*, Ann. and Mag. Nat. Hist. (4), vol. xvii, p. 398.Auchenoceros punctatus *Günth.*, Report on Pelagic Fishes of *Challenger*, p. 26, pl. 3.

94. MACRURIDÆ.

198 (161) **Macruronus novæ-zelandiæ.**Coryphaenoides novæ-zelandiæ (*Hector*) *Hutton*, Fishes N. Z., p. 49, fig. 79; *Hector*, Trans. N. Z. Inst., vol. v, p. 267.199 (160) **Trachyrhynchus longirostris.**Macrurus longirostris *Günth.*, Ann. and Mag. Nat. Hist. (5), vol. ii, p. 23.200 (159) **Nematonurus armatus.**Macrurus armatus *Hector*, Trans. N. Z. Inst., vol. vii, p. 249, pl. 11, f.201 (162) **Optonurus denticulatus.**Coryphaenoides denticulatus (*Rich.*) *Hutton*, Fishes N. Z., p. 49, fig. 80. •202 (163) **Chalinura murrayi.**Coryphaenoides murrayi *Günth.*, Ann. and Mag. Nat. Hist. (5), vol. ii, p. 26.203 (164) **Macrurus serrulatus.**Coryphaenoides serrulatus *Günth.*, Ann. and Mag. Nat. Hist. (5), vol. ii, p. 26.204 (158) **Cœlorhynchus australis.**Maeururus australis (*Rich.*) *Hutton*, Fishes N. Z., p. 49, fig. 78; Trans. N. Z. Inst., vol. v, p. 267.

Suborder HETEROSOMATA.

95. PLEURONECTIDÆ.

205 (166) **Caulopsetta scaphus.**Pseudorhombus scaphus (*Forst.*) *Hutton*, Fishes N. Z., p. 51, f. 82.206 (167) **Caulopsetta boops.**Pseudorhombus boops *Hector*, Trans. N. Z. Inst., vol. vii, p. 249, pl. 11, f.207 (165) **Brachypleura novæ-zelandiæ.**Brachypleura novæ-zelandiae (*Günth.*) *Hutton*, Fishes N. Z., p. 50.208 (168) **Ammotretis rostratus.**Ammotretis rostratus (*Günth.*) *Hutton*, Trans. N. Z. Inst., vol. viii, p. 215.209 (169) **Ammotretis guentheri.**Ammotretis guentheri *Hutton*, Trans. N. Z. Inst., vol. v, p. 267, pl. 11, f.210 (170) **Rhombosolea plebeia.**Rhombosolea monopus (*Günth.*) *Hutton*, Fishes N. Z., pp. 51, (*Hector*) 117, fig. 83.Bowenia novæ-zelandiæ *Haast*, Trans. N. Z. Inst., vol. v, p. 277, pl. 16, f.211 (171) **Rhombosolea flesoides.**Rhombosolea leporina (*Günth.*) *Hutton*, Trans. N. Z. Inst., vol. v, p. 268, pl. 11, f.Rhombosolea flesoides *Günth.*, Ann. and Mag. Nat. Hist. (3), vol. xi, p. 117; *Hutton*, Trans. N. Z. Inst., vol. viii, p. 215.212 (172) **Rhombosolea tapirina.**Rhombosolea tapirina (*Günth.*), Ann. and Mag. Nat. Hist. (4), vol. xvii, p. 399; *Hector*, Trans. N. Z. Inst., vol. vi, p. 106; *Hutton*, Trans. N. Z. Inst., vol. viii, p. 215.213 (173) **Rhombosolea retiaria.**Rhombosolea tapirina (*Günth.*) *Hector*, Trans. N. Z. Inst., vol. v, p. 268, pl. 13, f.Rhombosolea retiaria *Hutton*, Trans. N. Z. Inst., vol. vi, p. 107.214 (174) **Peltorhamphus novæ-zelandiæ.**Peltorhamphus novæ-zelandiae (*Günth.*) *Hutton*, Fishes N. Z., p. 52, fig. 84.

Order HEMIBRANCHII.

96. MACRORHAMPHOSIDÆ.

215 (125) *Centriscops humerosus*.*Centriscus humerosus* (*Rich.*) *Hutton*, Fishes N. Z., p. 38.

Order LOPHOBRANCHII.

97. SYNGNATHIDÆ.

216 (209) *Siphostoma pelagica*.*Syngnathus pelagicus* (*L.*) *Hutton*, Fishes N. Z., p. 67.217 (210) *Siphostoma blainvilliana*.*Syngnathus blainvillianus* (*Eydoux and Soul.*) *Hutton*, Trans. N. Z. Inst., vol. ix, p. 472; *Günther*, Ann. and Mag. Nat. Hist. (4), vol. xvii, p. 402, 1876.218 (211) *Doryichthys elevatus*.*Doryichthys elevatus* *Hutton*, Fishes N. Z.; p. 68.219 (212) *Ichthyocampus filum*.*Ichthyocampus filum* (*Günth.*) *Hutton*, Fishes N. Z., p. 68.220 (213) *Stigmatophora longirostris*.*Stigmatophora longirostris* *Hutton*, Fishes N. Z., p. 69; *Hutton*, Trans. N. Z. Inst., vol. viii, p. 216.

98. HIPPOCAMPIDÆ.

221 (214) *Solegnathus spinosissimus*.*Solenognathus spinosissimus* (*Günth.*) *Hutton*, Fishes N. Z., p. 69; *Hutton*, Trans. N. Z. Inst., vol. v, p. 271.222 (215) *Hippocampus abdominalis*.*Hippocampus abdominalis* (*Lesson*) *Hutton*, Fishes N. Z., p. 70.

Order PLECTOGNATHI.

99. BALISTIDÆ.

223 (216) *Monacanthus scaber*.*Monacanthus convexirostris* (*Günth.*) *Hutton*, Fishes N. Z., p. 71, fig. 114; Trans N. Z. Inst., vol. v, p. 271; vol. ix, p. 354 (identified with *Balistes scaber*, F.).

100. OSTRACIONTIDÆ.

224 (217) *Ostracion fornasini*.*Ostracion fornasini* (*Bianc.?*) *Hutton*, Fishes N. Z., p. 71.*Aracana aurita* (*Shaw*) *Hutton*, Trans. N. Z. Inst., vol. v, p. 271.

101. TETRAODONTIDÆ.

225 (218) *Amblyrhynchotus richei*.*Tetrodon richei* (*Freminv.*) *Hutton*, Fishes N. Z., p. 72.

102. DIODONTIDÆ.

226 (219) *Dicotylichthys jaculiferus*.*Chilomycterus jaculiferus* (*Cuv.*) *Hutton*, Fishes N. Z., p. 73.*Dicotylichthys jaculiferus* *Hutton*, Trans. N. Z. Inst., vol. v, p. 271.

103. MOLIDÆ.

227 (220) *Mola mola*.*Orthagoriscus truncatus* *Hutton*, Fishes N. Z., p. 73.*Orthagoriscus mola* (*L.*) *Hutton*, Trans. N. Z. Inst., vol. v, p. 271; vol. 18, p. 135.

Order PEDICULATI.

104. ANTENNARIIDÆ.

228 (101) *Saccarius lineatus*.*Saccarius lineatus* (*Günth.*) *Hutton*, Fishes N. Z., p. 30.

105. CERATIIDÆ.

229 (102) *Ægeonichthys appellii*.*Ægeonichthys appellii* *Clarke*, Trans. N. Z. Inst., vol. x, p. 245, pl. 6, (5 fig.).

N O T E S.

The reasons for most of the numerous changes in nomenclature apparent in the previous catalogue will be obvious to those who are sufficiently acquainted with the literature of ichthyology. There are, however, a number of new generic names, which may be indicated in the following notes, with the reasons in brief for giving them. The numbers prefixed refer to those in the preceding catalogue.

NOTE 1 (46-49).—The scopeloid fishes have been examined recently by Drs. Goode and Bean, who have had large collections to base their researches upon. Dr. Goode has kindly given me the results of his investigations, and the species enumerated in the catalogue have been named on his authority. *Lampadena* is a new genus, established by Drs. Goode and Bean, and will be published in their forthcoming work on deep-sea fishes.

NOTE 2 (51, 52).—The leptocephaloid fishes enumerated are the mature forms. Larval forms, however, appear in Prof. Hutton's list under the following names and numbers:

225. *LEPTOCEPHALUS LONGIROSTRIS* (*Kaup*) *Haast*, Trans. N. Z. Inst., vol. VII, 238, 1875.

226. *LEPTOCEPHALUS ALTUS* (*Rich.*) *Hutton*, Trans. N. Z. Inst., vol. VIII, 215, 1876.

One (225) may be the larva of the *conger* and the other (226) of the *Congermuræna*, but the identification is extremely doubtful, and can only be effected when more data are at hand.

NOTE 3 (79).—The *Platystethus huttonii* of Günther does not belong to the genus so named by that naturalist, but is distinguished by the many-rayed first dorsal (13 spines); it may therefore be called *EVISTIUS* (< *εν*, augmentative + *ἴστιον*, sail). The “*Platystethus cultratum*” can not retain that name, as *Platystethus* had been used long previously by Mannerheim (1830) and Erichson (1840) for a genus of beetles; it may be called *BATHYSTETHUS* (*βαθύς*, deep) *CULTRATUS*.

NOTE 4 (88).—The generic name *Prometheus* having been used by Hubner for a group of lepidopterous insects in 1822-26, the genus called by the same name in 1839 by Lowe must receive another, and, to make the change as little as possible, may be called *Promethichthys* (<*προμηθης*, wary + *ἰχθυς*, fish).

NOTE 5 (94-98).—Most of the *Zeidae* of New Zealand are destitute of the shields which are characteristic of *Zeus*.

Cyttus has a form resembling that of *Zeus*, and is represented by the two species *C. australis* and *C. novæ-zelandiae*.

Rhombocyttus is nearly related to *Cyttus*, but is distinguished by its angulated high rhombiform body and elongated filiform dorsal spines as well as ventral rays. The only species is *R. traversi*.

Capromimus has the aspect of the genus *Capros* and has an oblong subrhombiform body, 7 pungent dorsal spines, dorsal and anal increasing backwards, and ventrals with 6 rays besides the spine. The only species is *C. abbreviatus* = *Platystethus abbreviatus* Hector. Possibly the genus may prove not to be a caproid when anatomically examined.

NOTE 6 (110).—*Sparosomus auratus* is more different from *Pagrus* than that group (represented by its type) is from *Sparus* or *Pagellus*, and is differentiated by the obsolescence of the inner lateral crests.

NOTE 7 (162).—The *Sticharium rubrum* or *Clinus rubrus* of Hutton is distinguished from other fishes by the combination of a form like that of *Clinus* with a dorsal having many spines (about 40) and only about 1 ray. It is therefore named *Ericentrus rubrus* (<*ερι*, augmentative + *κεντρον*, spine); *rubrus* is accepted from Prof. Hutton, as it is an alternative (although rare) for *ruber*.

NOTE 8 (163).—The *Sticharium flavescens* or *Clinus flavescens* of Hutton is differentiated from other types (and especially *Ericentrus*) by the form, more nearly even dorsal with a short-rayed portion (about 38 spines + 6 rays), and imperfect lateral line; it may appropriately be designated as *Cogrammus* (*κολός*, curtailed + *γραμμα*, line).

NOTE 9 (171).—The *Tripterygion fenestratum* of most authors appears to be distinguished from the typical species of *Tripterygion* by the less divided dorsal with a shorter median portion and by the form of the sub-perculum, as well as general aspect. It may therefore be called *Notoclinus fenestratus*.

NOTE 10 (205, 206).—The *Pleuronectes scaphus* of Forster and *Pseudorhombus boops* of Hector constitute a peculiar genus, viz:

CAULOPSETTA.—Psettine Pleuronectids with "teeth rather large, conical, pointed, the lateral ones of the upper jaw the shortest," lateral line with a distinct arch in front, "scales ctenoid," mouth moderate, interorbital area very narrow, and numerous dorsal and anal rays. (<*Kονιός*, stalk quasi ray + *Ψηττα*, flatfish, in analogy with *Polycalus* Günther.)

Type *C. scaphus* = *Pseudorhombus scaphus* (Forst.) Hutton.

The genus is apparently related to *Arnoglossus*, *Syacium*, and *Citharichthys* rather than to *Paralichthys* (= *Pseudorhombus*). The long base of the ventral on the ridge of the abdomen, the comparatively short mandible, and the absence of any caudal constriction widely separate it from *Pseudorhombus* or *Paralichthys*.